

File # 23110



CONSULTANT SERVICES AGREEMENT

PROFESSIONAL SERVICES

**TO ASSESS & ANALYZE WATERSHEDS,
INVENTORY STORMWATER FACILITIES**

& STORM CONVEYANCE

PROJECT #: 328-041110-211828002

Augusta, GA Engineering Department
Engineering Division
POC: Hameed Malik, Ph.D., PE, Assistant Director
~ Constantine Engineering ~



CONSULTANT SERVICES AGREEMENT

**PROFESSIONAL SERVICES TO ASSESS & ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE**

PROJECT NUMBER: 328-041110-211828002

TABLE OF CONTENTS:

REQUEST FOR QUALIFICATIONS.....

SCOPE OF SERVICES.....

CONTRACTOR'S QUALIFICATIONS:

✚ EXECUTIVE SUMMARY.....

✚ COMPANY OVERVIEW.....

✚ PROJECT TEAM AND THEIR SUCCESS WITH SIMILAR PROJECTS.....

✚ RELATED EXPERIENCE AND SUCCESS.....

✚ WATERSHED ANALYSIS & ASSESSMENT AND STORM CONVEYANCE SYSTEM
INVENTORY & MAPPING EXPERIENCE DURING LAST 10- YEARS.....

✚ PROPOSED SCHEDULE.....

FEE SCHEDULE.....

ADDENDUM(S) 1 & 2.....

AGREEMENT.....

GENERAL CONDITIONS.....

ATTACHMENT B.....

✚ Statement Of Non-Discrimination.....

✚ Non-Collusion Of Prime Bidder/Offeror.....

✚ Conflict Of Interest Statement.....

✚ E-Verify Documentation.....

✚ Save Program.....

✚ Contractor & Subcontractor Affidavits

APPENDIX A

✚ Standard Specifications

Augusta, GA Engineering Department

REQUEST FOR QUALIFICATIONS

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

Request for Qualifications

Request for Qualifications will be received at this office until Friday, June 21, 2013 @ 11:00 a.m. for furnishing:

RFQ Item #13-149 Professional Services to Assess & Analyze Watersheds, Inventory Stormwater Facilities & Storm Conveyance for Engineering Department

RFQs will be received by: The Augusta Commission hereinafter referred to as the OWNER at the offices of:

Gerri A. Sams, Director
Augusta Procurement Department
530 Greene Street - Room 605
Augusta, Georgia 30901

RFQ documents may be viewed on the Augusta Georgia web site under the Procurement Department **ARCbid**. RFQ documents may be obtained at the office of the Augusta, GA Procurement Department, 530 Greene Street – Room 605, Augusta, GA 30901.

All questions must be submitted in writing by fax to 706 821-2811 or by email to procbidandcontract@augustaga.gov to the office of the Procurement Department by Friday, June 7, 2013 @ 5:00 P.M. No RFQ will be accepted by fax, all must be received by mail or hand delivered.

No RFQ may be withdrawn for a period of **90** days after time has been called on the date of opening.

Invitation for bids and specifications. An invitation for bids shall be issued by the Procurement Office and shall include specifications prepared in accordance with Article 4 (Product Specifications), and all contractual terms and conditions, applicable to the procurement. **All specific requirements contained in the invitation to bid including, but not limited to, the number of copies needed, the timing of the submission, the required financial data, and any other requirements designated by the Procurement Department are considered material conditions of the bid which are not waiveable or modifiable by the Procurement Director.** All requests to waive or modify any such material condition shall be submitted through the Procurement Director to the appropriate committee of the Augusta, Georgia Commission for approval by the Augusta, Georgia Commission. Please mark RFQ number on the outside of the envelope.

Bidders are cautioned that acquisition of RFQ documents through any source other than the office of the Procurement Department is not advisable. Acquisition of RFQ documents from unauthorized sources places the bidder at the risk of receiving incomplete or inaccurate information upon which to base his qualifications.

GERI A. SAMS, Procurement Director

Publish:
Augusta Chronicle May 16, 23, 30, June 6, 2013
Metro Courier May 22, 2013

cc: Tameka Allen Deputy Administrator
 Abie Ladson Engineering Department
 Hameed Malik Engineering Department

Revised: 8/15/2011

Augusta, GA Engineering Department

SCOPE OF SERVICES

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

**PROFESSIONAL SERVICES TO ASSESS & ANALYZE WATERSHEDS, INVENTORY
STORMWATER FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

SCOPE OF SERVICES

Objective: The objective of the project to characterize the **CITY's** watersheds sufficiently to develop specific management recommendations for the watersheds through a multi-phase effort. Management recommendations may include BMPs, bank stabilization projects, asset replacement, and water quality and / or quantity monitoring. Concepts for walking trails may also be analyzed for compatibility in meeting watershed management needs.

SCOPE OF WORK:

Phase 1: System Inventory: Closed Pipe and Upland Ditches

Overview : The objective of Phase 1 will be to inventory and characterize the stormwater conveyance system.

Task A: Digitize Existing Scanned Images

1. The **CONSULTANT** will utilize scanned images of the **CITY's** conveyance system as provided by the **CITY** to digitize existing storm drainage assets. The subject hydrologic basin(s) contain 1,500 scanned images that have been georeferenced, rectified, and filed as part of the AED basedata geodatabase provided by the **CITY**. Not all of these sheets contain storm drainage assets and as such, an initial review of all 1,500 sheets will be completed and the sheets will be sorted based on whether storm data can be digitized from the scanned image.
2. Additionally, the **CITY** will provide the **CONSULTANT** with scanned images that have not been georeferenced, rectified and incorporated into the AED basedata geodatabase. These images are anticipated to be provided in groups of 50 sheets per delivery; however the total number of scanned images is not known. The **CONSULTANT** will georeference and rectify the images using available GIS data provided by the **CITY** utilizing rubbersheeting practices. The **CONSULTANT** will not utilize spatial filtering techniques such as kriging or warping to provide precise image alignment, rather a "best fit" using available background data will be performed. Once the scanned images are georeferenced and rectified, they will be included in the AED basedata geodatabase.
3. Scanned images containing storm drainage data will be digitized using on-screen digitization techniques. Available attribute information will be populated per the AED stormwater geodatabase schema as it is available on the source documents.

Attributes identified in the AED stormwater geodatabase schema that are not available on the source documents will be populated during the field inventory tasks.

The **CONSULTANT** will track the receipt and work progress for each scanned image in a database format capable of being shared with the **CITY**. Updates on the status of scanned images will be made available to the **CITY** on a weekly basis.

The **CONSULTANT** will invoice the **CITY** based on per unit pricing for scanned images as provided in the Agreement.

Task B: Inventory of Closed Pipe and Open Conveyance Systems

1. As the **CONSULTANT** completes the work tasks identified in Task A for portions of the storm drainage system, inventory crews will begin an in-the field review of digitized assets and collection of additional storm drainage data not available on source documents.

The **CONSULTANT** will review digitized portions of their assigned hydrologic basin(s) with the **CITY** prior to the commencement of field inventory efforts. Portions of the system to be field inventoried will be roughly comprised of complete drainage sub-systems including collection and conveyance structures upstream of the point at which stormwater discharges into a receiving stream.

During this review, the **CITY** will update the **CONSULTANT** on any issues impacting the ability of field crews to process through the inventory area. This may include but is not limited to easement access, construction activities, traffic coordination or public notification. The **CITY** and the **CONSULTANT** will also review questionable areas of the system in an effort to provide field crews with advance intelligence on how to complete the field inventory effort.

Once deployed, field crews will verify storm drainage structure locations and attribute data as digitized from source documents. Structures found in the field that did not appear on source documents will be recorded using a GPS or digitized locations. The **CONSULTANT** will populate attribute data per the AED stormwater geodatabase schema. Similarly, attribute data missing from source documents or inconsistent with field observations will be entered into the geodatabase. The intent of the field inventory process will be to verify or edit the geodatabase to reflect conditions as identified in the field.

Field crews will also provide a cursory assessment of the condition of the structure. Structures will be classified as Good, Fair or Poor based on observation from the surface. Field crews will not enter any structure for the purpose of obtaining attributes or condition assessment information.

A minimum of two (2) photographs of each structure will be collected and linked to the asset in the GIS. Photographs are to include one photograph showing the structure and surrounding area and a second photograph is to show the interior of the structure. The **CONSULTANT** will not remove grates or structure tops to collect attributes or photographs other than on manhole structures where manhole lids must be removed to inspect the structure or where sufficient clearance is required to obtain a clear photograph.

Field crews will spend a total of 10 minutes searching for or attempting to access an individual structure. If after 10 minutes the structure cannot be located or accessed, the asset will be noted as either Not Found or Difficult Access. Difficult Access structures will be identified and conveyed to the CITY on a weekly basis for evaluation for assistance in gaining access while working in that area.

Field crews will note any recommendations for resolving access or location issues. Difficult Access and Not Found structures will be reported on a weekly basis via electronic means. The **CONSULTANT** will return to inventory structures as directed by the CITY once the structure in question has been located or made accessible by the CITY. Difficult Access or Not Found structures will be assessed the same unit rate as structures which are inventoried. Subsequent visits to inventory previously noted Difficult Access or Not Found structures will be assessed the same unit rate for each return visit to the individual structure in the event field inventory crews are not able to access a structure that has been reported as accessible.

The **CONSULTANT** will field inventory those structures that are within public easements. The CITY will notify the **CONSULTANT** of structures that do not have permanent easements and will assist in accessing structures outside permanent easements as necessary.

Open channel systems will also be verified or collected by field crews. Open channel systems conveying public storm drainage will be inspected approximately 10 to 15 feet upstream and downstream of closed system structures 15" in diameter or greater. A measurement of channel width and depth will be collected where width represents the top width of the channel and depth represents depth to overflow of the channel for upstream and downstream locations. Channels will be digitized as linear features connecting to closed system structures or outfalls.

The **CONSULTANT** will record rim elevations and calculate invert elevations for all structures within the geodatabase. The source for rim and invert elevations will be scanned source documents as well as interpolated surface elevations derived from the Digital Elevation Model provided by the CITY.

2. Approximately 10% of the total number of structures added to the geodatabase through digitizing and field inventory will be identified for resampling of rim elevations. These elevations will be collected using survey-grade GPS receivers accessing the AED base station network or USGS-affiliated virtual reference station network. Vertical accuracy of surveyed rim elevations will be within the published standards for the network utilized.

The structures to be located with survey-grade GPS will be distributed throughout the collection system and will be representative of the main branches of the collection system. Vertical errors between digitized plans and measured data will be spread amongst the intervening points, unless there is sufficient evidence of a hard break in the data. Surveyed elevations will be noted in the geodatabase for future reference.

Task C: Inventory of Receiving Streams

1. The **CONSULTANT** will conduct a stream walk along all accessible branches of the receiving streams in the work area with AED staff and the Southeastern Natural Sciences Academy. The stream will be accessed via sanitary sewer easements as well as road crossings. The stream will be evaluated at intervals approximately every 1,000 feet. Evaluations will consist of a characterization of bank stability to indicate whether the bank is intact or eroded as well as to note any areas of sediment deposition and overall habitat quality. Photographs of the bank will be taken on both sides of the stream and linked to the inspection location within the geodatabase.

The protocol for stream assessments will be provided by the **CITY**. Based on the protocol for stream assessments; the **CONSULTANT** will utilize field inventory crews or staff scientists for the stream characterization. The **CONSULTANT** will utilize field inventory crews for stream walk assessments where AED staff or Southeastern Natural Sciences Academy will conduct the stream characterization. The **CONSULTANT** will utilize staff scientists for stream characterizations where assessment protocols and the **CITY** liabilities dictate the expertise of qualified scientists. The **CONSULTANT** will provide staff to support stream walk assessments for a total of sixty (60) days. If additional time is needed to complete this portion of the project, the **CONSULTANT** will extend this time period upon agreement between the **CITY** and the **CONSULTANT**.

2. The **CONSULTANT** will locate outfalls encountered while performing the stream walk that have not previously been entered into the geodatabase by the **CITY**. Attribute information as included in the AED outfall inspection format will be collected and attached to the outfall location in the geodatabase.

3. The **CONSULTANT** will review FEMA cross-sections as identified by the **CITY** to determine if they are stable or evolving. Cross section reviews will include the establishment of reference stations located with x, y and z coordinates. Reference stations will be established with four-points of reference (two top of bank and two bottom of bank sections) for the in-channel section.
4. The **CONSULTANT** will prepare a characterization summary of the receiving stream based on observations during the stream walk and cross-section survey. The **CITY** will provide the characterization summary protocol.

Locations where evaluations were conducted will be entered into the AED geodatabase and photographs will be linked to point features representing evaluation locations. The **CONSULTANT** will prepare a written three (3) page technical memo summarizing the stream characterization. The technical memo will reference the AED geodatabase and will include GIS graphics supporting the assessment protocol.

Task D: Rain Gauge Installation

1. The **CONSULTANT** will review proposed rain gauge locations and provide recommendations for alternate sites. Sites will be evaluated for relative location to other stations, accessibility, aerial obstructions and possible reuse as a long-term sampling and/or monitoring location. During the evaluation, the **CONSULTANT** will visit each proposed rain gauge location as well as any locations being proposed as alternative sites.
2. The **CITY** will provide the **CONSULTANT** with specifications for the make and model as well as the preferred provider of the rain gauges to be installed. The **CONSULTANT** will prepare a plan for installing the rain gauges that complies with manufacturer recommendations. The **CONSULTANT** will install a total of ten (10) rain gauges within the work area and will provide monitoring of the gauges throughout the duration of this Phase of the project. The **CONSULTANT** will visit each monitoring station at least quarterly to inspect the station and remove any accumulated debris.
3. The **CITY** has requested the use of rain gauges that utilize wireless or cellular data transfer of monitoring results. The **CONSULTANT** will configure receipt of the wireless or cellular data to be relayed to the **CITY** for real-time processing and display. In the event wireless or cellular data access cannot be obtained for a rain gauge based on lack of reception in the area of the gauge; the **CONSULTANT** will visit the location on a weekly basis to retrieve monitoring data and verify the working condition of the gauge.

Task E: Project Coordination and Deliverables

1. The **CONSULTANT** shall endeavor to maintain a web-based GIS application for displaying the status of inventory data collection and resolving questions with the entire project team. The GIS application should provide password-secured access for the **CITY**.
2. The **CONSULTANT** will meet with the **CITY** onsite or by agreed upon electronic means available once per month to review project status and to coordinate upcoming work tasks.
3. The **CONSULTANT** will deliver all GIS inventory data in the AED geodatabase format along with all documents and photographs linked to the corresponding assets. Incremental data deliveries will be made based on the portions of the basins identified during Task B 1.
- 4.

Phase 2: Modeling Effort

Overview: The **CONSULTANT** will assist the **CITY** in developing simple hydraulic capacity models of the receiving system documented in Phase 1. This section is not currently defined depending on the extents of information collected in Phase 1.

Phase 3: Water Quality Monitoring Effort

Overview: The **CONSULTANT** will assist the **CITY** in developing stream water quality analysis techniques and assist in the execution of these techniques and collection of data. This section is not currently defined depending on the extents of information collected in Phases 1 and 2.

Augusta, GA Engineering Department

CONTRACTOR'S QUALIFICATIONS

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**



June 21, 2013

Ms. Geri A. Sams
Director of Procurement
City of Augusta
530 Greene Street, Room 605
Augusta, Georgia 30901

RE: Statement of Qualifications for RFQ Item #13-149
Professional Services to Assess & Analyze Watersheds, Inventory Stormwater Facilities & Storm
Conveyance for Engineering Department

Dear Ms. Sams:

Constantine Engineering has partnered with ZEL Engineers and Cardno ENTRIX to bring you an unparalleled approach to your ultimate goal of **developing a watershed-based stormwater management program for Augusta-Richmond County**. As detailed in the enclosed Statement of Qualifications, the differentiating features of our team's understanding, approach and qualifications will translate into tangible benefits for the Augusta Engineering Department.

Constantine Engineering currently complies with and will continue to comply with the Augusta Georgia Code, General Conditions and the Augusta Local Small Business Opportunity Program as stipulated in RFQ Item #13-149. The signatory to this letter is authorized to bind Constantine Engineering to this Statement of Qualifications (SOQ) for a period of not less than ninety (90) days from date of submittal.

We look forward to strengthening our already successful relationship with the City of Augusta through our participation in your stormwater inventory and watershed assessment program. If you have any questions concerning our enclosed response to your Request for Qualifications, please do not hesitate to contact me at your convenience.

Sincerely,

CONSTANTINE ENGINEERING, INC.

A handwritten signature in blue ink, appearing to read 'STR', is written over a faint, larger signature.

Scott R. Todd, P.E.
Project Manager
706-664-0664
stodd@tcgeng.com

1. Executive Summary	1
Benefits of Constantine Team	1
Summary of Qualifications	1
Quick Reference	4
2. Company Overviews	5
Constantine Engineering, Inc.	5
ZEL Engineers	6
Cardno ENTRIX	6
3. Project Team	7
Previous Project Team Successes	7
Organizational Chart	10
Key Personnel	10
4. Related Experience and Success	29
Similar Project Experience	29
Client References	30
Project Understanding and Approach	31
Asset Collection Services	32
Water Quality Characterization	33
5. Watershed and Stormwater Experience	37
6. Proposed Schedule	45
7. Appendix	46
Attachment B: Consolidated Forms	46
Affidavit Verifying Status for Augusta, Georgia Benefit Application	46

1. Executive Summary

Benefits of Constantine Team

Constantine Engineering has partnered with ZEL Engineers and Cardno ENTRIX to create a team that is ideally positioned to inventory stormwater infrastructure and analyze watersheds for the Augusta Engineering Department. Each firm contributes qualifications, experiences and capacity tailored for his specific challenge. In combination, we offer an unparalleled approach to your ultimate goal of **developing a watershed-based stormwater management program for Augusta-Richmond County**.

The differentiating features of the Constantine team will translate into the following tangible benefits for the Augusta Engineering Department:

<i>Constantine Team Feature:</i>	<i>Augusta Engineering Department Benefit:</i>
Augusta's staff has enjoyed successes with our proposed team and has developed professional relationships with our key personnel, many of whom are former City of Augusta Engineering Department employees.	Augusta will be working with familiar professionals you already know and trust, who are ready to begin detailed data collection and watershed assessments immediately without a lengthy learning curve.
Our approach to inventorying and mapping stormwater infrastructure and characterizing watershed basins has been successfully completed for many municipalities across the southeastern United States.	Stormwater inventory data collection and watershed analyses will be conducted efficiently, economically, and in a manner acceptable to the local scientific and regulatory communities.
The work will be conducted in the local offices of Constantine and ZEL, with additional deep capacity provided by Cardno ENTRIX's nearby offices in Atlanta, GA and Clemson, SC.	The Constantine project team will be accessible and responsive to the Augusta Engineering Department staff, combining local knowledge with regional expertise.

Summary of Qualifications

The Constantine team's understanding, approach and qualifications for the Augusta Stormwater Inventory project are summarized below and detailed in subsequent sections of this Statement of Qualifications (SOQ).

Company Profiles

Constantine Engineering provides a broad range of engineering services including water, wastewater, stormwater, natural gas, water resources management, coastal engineering, public works, software development, subsurface utility engineering (SUE), and geographic information system (GIS) mapping to utility, municipal, industrial, federal, state, and commercial clients throughout the Southeast and Colombia, South America.

Headquartered in Augusta, **ZEL Engineers** (Zimmerman, Evans and Leopold, Inc.) has provided multi-disciplinary engineering services to utilities, municipalities and industries in the Central Savannah River Area (CSRA) since 1956, including a long history of successful projects for Augusta-Richmond County.

A professional environmental consulting company, **Cardno ENTRIX** specializes in water resources management, natural resources management, permitting and compliance, environmental and natural resource liability management, and economics and decision sciences.

Key Professionals

The Constantine team's proposed project manager, Scott Todd, P.E., has over 17 years' of municipal engineering experience in Georgia, including his ongoing management of the Water and Wastewater Systems Master Plan for the Augusta Utilities Department. He will be supported by the following key task leaders:

- Jorge Jimenez, P.E. – a former Augusta City Engineer and current president of ZEL Engineers with over 40 years' experience solving water, wastewater, stormwater and public works challenges in Augusta-Richmond County, will provide overall technical guidance and quality control.
- Ken Wardenski – leveraging 25-years' of local experience on public works, utility and environmental projects in Augusta, Mr. Wardenski will oversee all field data collection, GIS integration, floodplain evaluations, and conceptual trail designs.
- Paul Leonard – a recognized national expert with 25-years' experience in hydroelectric project licensing, NEPA compliance, watershed studies, and instream flow investigations, Mr. Leonard will manage all water quality aspects of the Augusta Stormwater Inventory project.

Relevant Experience

Our team has local knowledge and regional experience that is crucial to the success of this project in two key ways:

1. Our team members have successfully completed similar projects for the City of Augusta, including ZEL's series of projects from 2002 to 2007 to improve drainage and mitigate flooding in the Phinizy Swamp and East Augusta basins.
2. Our firms have successfully partnered on other relevant projects, such as the current Constantine/ZEL collaboration on the Water and Wastewater Systems Master Plan for the Augusta Utilities Department; Constantine and Cardno ENTRIX teaming to monitor water quality and manage wetlands mitigation for the Okaloosa County (Florida) Water and Sewer Department; and the recent ZEL/Cardno ENTRIX partnership on the Instream Flow Study, Permitting, and Environmental Assessment for Water Withdrawal for the Augusta Utilities Department.

Technical Approach

The Constantine project team understands that the Augusta Engineering Department (AED) is developing a watershed-based stormwater management program for Augusta-Richmond County. Initial steps in this process include inventorying and assessing existing stormwater infrastructure; characterizing current water quality in streams and wetlands; and recommending stormwater best management practices (BMPs) and capital improvements to enhance water quality, protect aquatic diversity and mitigate flooding. These improvements will be funded by a Stormwater Utility Fee and Services Program being developed by AED through subsequent professional services contracts.

To meet AED's goals and objectives, the Constantine project team will combine elements of recent successful projects into the a comprehensive, efficient approach to the Augusta Stormwater Inventory project as detailed in Section 4 of this SOQ.

Schedule

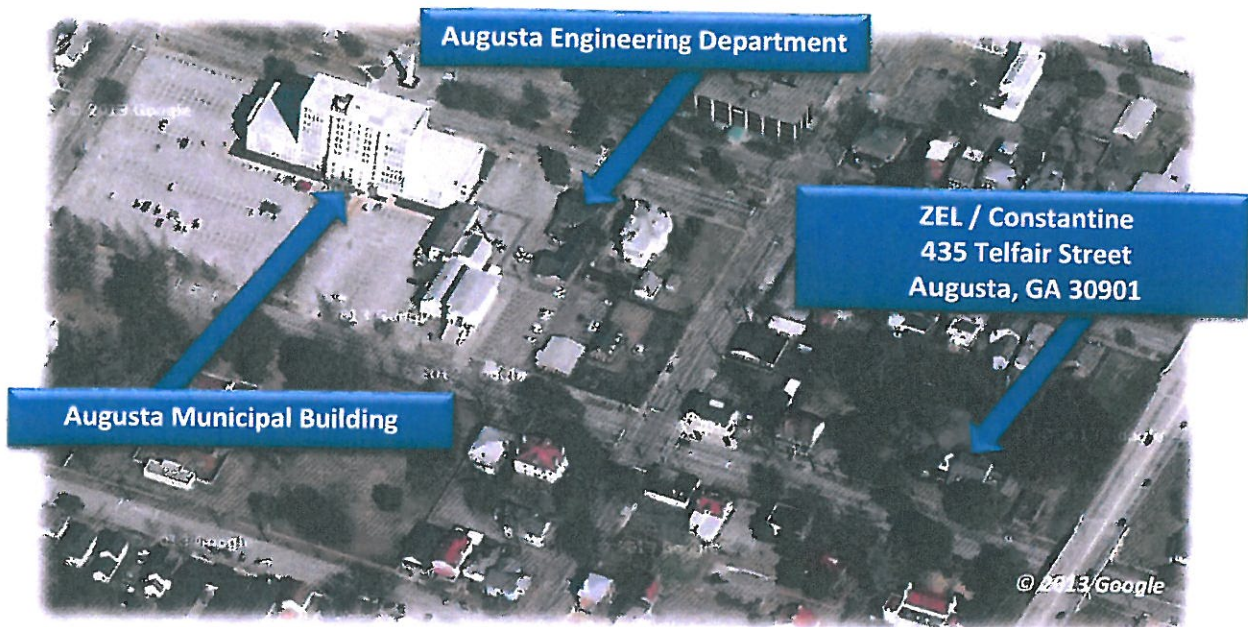
Our project approach is prioritized to meet Augusta's schedule milestones for evaluating the current stormwater GIS model; inventorying, inspecting and assessing the stormwater infrastructure features; evaluating floodplains; collecting water quality data; and recommending Best Management Practices (BMP) and water quality enhancements, all completed within one calendar year from notice-to-proceed.

References

Constantine, ZEL and Cardno ENTRIX have performed similar condition assessment, mapping and watershed projects for many clients in Georgia, including the City of Augusta (Utilities and Engineering Departments); the City of Perry; the City of Warner Robins; Cobb County; Gwinnett County; and Athens-Clarke County. Representative client references are included in Section 4 of this SOQ. We encourage the Augusta Engineering Department to contact or visit these references to learn how they have benefited from partnering with our firms.

Proximity to Augusta

Constantine currently leases space in ZEL's office building at 435 Telfair Street in downtown Augusta, one block from the City's Engineering Department and Municipal Building. We will complete the Stormwater Inventory project in this local office, with additional support from Cardno ENTRIX's nearby offices in Atlanta, GA and Clemson, SC.






Quick Reference

To facilitate your review of this document, the following matrix provides a quick cross reference of the content in the Executive Summary to more detailed information in the Statement of Qualifications (SOQ):

<i>Topic</i>	<i>SOQ Location</i>
Company Qualification Profiles	Section 2, Pages 5-6
Key Professionals	Section 3, Pages 10-28
Relevant Experience	Section 3, Pages 7-9 Section 4, Pages 29-30 Section 5, Pages 37-44
Technical Approach	Section 4, Pages 31-36
Schedule	Section 6, Page 45
References	Section 4, Pages 30-31
Proximity to Augusta	Section 2, Page 5

2. Company Overviews

Constantine Engineering has partnered with ZEL Engineers and Cardno ENTRIX to bring Augusta a team that is ideally positioned to inventory stormwater infrastructure and analyze watersheds. Each firm contributes qualifications, experiences and capacity tailored for his specific challenge.

Firm	Size, Resources, History ¹	Project Role(s)
	40 employees 10 office locations Established 1993	Project Management Asset Collection Services
	14 employees 1 office location Established 1956	Asset Collection Services Water Quality Characterization Services
	1,189 employees 43 office locations Established 1984	Water Quality Characterization Services

Constantine currently leases space in ZEL's office building at **435 Telfair Street** in downtown Augusta, one block from the City's Engineering Department and Municipal Building. We will complete the Stormwater Inventory project in this local office, with additional support from Cardno ENTRIX's nearby offices in Atlanta, GA and Clemson, SC.

Constantine Engineering, Inc.

Constantine Engineering, Inc. is a full service consulting engineering and technical services firm made up of dedicated professionals that provide engineering and technology solutions to utility, municipal, industrial, federal, state, and commercial clients throughout the Southeast and Colombia, South America.

Constantine Engineering provides a broad range of services in markets that include water and wastewater, stormwater, natural gas, water resources management, coastal engineering, public works, software development, subsurface utility engineering (SUE), and geographic information system (GIS) mapping services.

Constantine Engineering is a part of The Constantine Group, Inc., an ensemble of companies that provides turnkey engineering, management, and construction services, which includes

- Constantine Management, Inc. – an ownership/operations/management entity that allows for flexible and innovative contracting solutions.
- Constantine Constructors, Inc. – a full service utility construction company designed to support our water and wastewater, public works, SUE, and alternative project delivery (such as design-build) project needs.
- Civil Systems, Inc. (CSI) – our software group, which develops, maintains and supports

¹ Reflects establishment of oldest predecessor firm in the case of mergers/acquisitions

utility compliance and management tools.

Every element of The Constantine Group is structured to leverage collective expertise, allowing Constantine to satisfy each client's unique needs and deliver results that ensure success. This, coupled with their extensive experience, allows them to understand, support, and work in a spirit of partnership with clients.

ZEL Engineers

Headquartered in Augusta, ZEL Engineers (Zimmerman, Evans and Leopold, Inc.) has provided multi-disciplinary engineering services to utilities, municipalities and industries in the Central Savannah River Area (CSRA) since 1956, including a long history of successful projects for Augusta-Richmond County.

ZEL provides design, investigation, and analysis for local, state, and federal governments as well as private industry. Clients are served in many diverse fields including: Water Treatment and Distribution, Plant Operation Assistance, Wastewater Treatment Plant Design, Hydraulic Analysis and Master Planning, Community Mapping and Facilities Management and Maintenance Systems, Laboratories and Other Building Facilities, Roads, Bridges and Appurtenances, Operation Analysis for Cost Reduction and Compliance, Investigations, Studies, Reports and Cost Estimates, General Structural Design and Analysis, Sewer System Evaluation and Inspection, Solid Waste Collection and Disposal, Sludge Handling and Disposal, Site Development.

ZEL is owned by practicing Professional Engineers thus assuring clients of maximum effort toward successful completion of projects.

Cardno ENTRIX

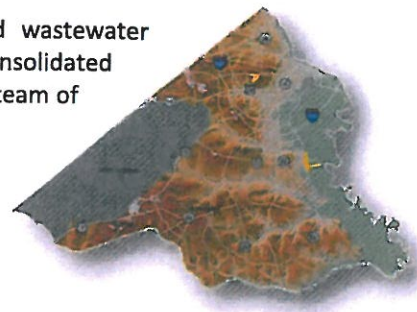
Since 1984, Cardno ENTRIX has a long history of providing environmental planning, permitting, engineering and economic consulting services to public and private entities engaged in the management protection, development, treatment, delivery, use, and reuse of valuable water resources, wetlands, and streams. Cardno ENTRIX is an environmental and natural resources management consulting firm specializing in water resources management, natural resource management, permitting and compliance, and liability management. Clients turn to Cardno ENTRIX for help navigating complex environmental challenges because of our reputation for integrity, responsiveness, and innovation as well as the wealth of knowledge and experience of their multi-disciplinary team of environmental professionals. The senior staff members and management are highly regarded and respected throughout private and public sectors for their technical expertise, science-based approach and ability to provide sustainable business solutions. Throughout Georgia and the Southeast, Cardno ENTRIX's staff has conducted hundreds of projects that exemplify their knowledge of watersheds, stormwater, wetlands, aquatic biology and water resources.

3. Project Team

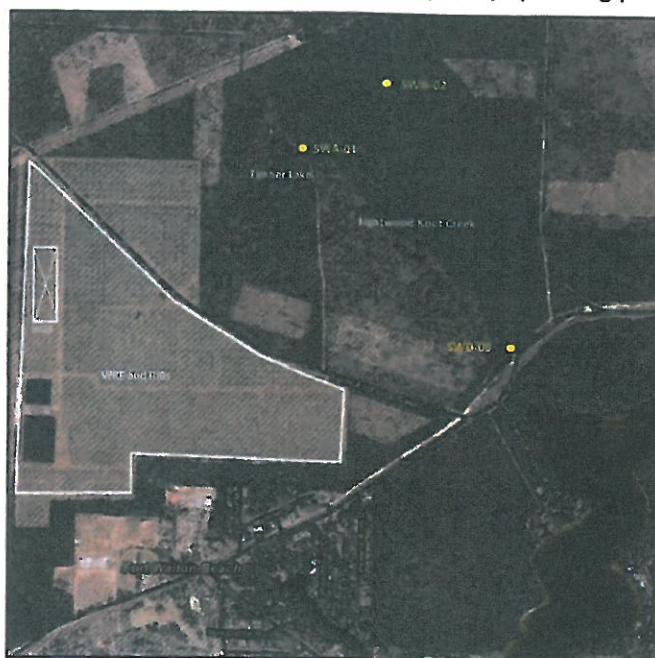
Previous Project Team Successes

Just as important as individual qualifications and experience, our firms have partnered on recent successful projects. These previous experiences have allowed us to cross corporate boundaries to operate as a cohesive team, complimenting each other's capabilities with niche expertise and additional resources. The following project descriptions provided summaries of our previous teaming successes.

Augusta Utilities Department Water and Wastewater Systems 20-Year Master Plan	
Consultant Team	Constantine Engineering and ZEL Engineers
Client Reference	Tom Wiedmeier, P.E. – Director Augusta Utilities Department 360 Bay Street, Suite 180 Augusta, GA 30901 (706) 312-4132 twiedmeier@augustaga.gov
<p>Project Description:</p> <p>The August Utilities Department (AUD) provides water and wastewater services to Georgia's second largest metropolitan area, the consolidated government of Augusta-Richmond County. AUD selected the team of Constantine Engineering, Inc. and ZEL Engineers to develop a 20-year master plan for their water and wastewater system.</p> <p>The scope of professional services includes the following:</p> <ul style="list-style-type: none"> • Projecting service area populations, potable and raw water demands, and sanitary sewer flows for the 20-year planning period. • Reviewing regulatory mandates affecting AUD water and wastewater system operations, including Corps of Engineers regulation of flow in the Savannah River and Augusta Canal, and the pending Total Maximum Daily Loading (TMDL) criteria for the Savannah Harbor and River system. • Updating water and wastewater system hydraulic models. • Evaluating existing treatment, distribution and collection systems. • Developing a 20-year capital improvement program (CIP). • Coordinating public meetings with elected officials and local stakeholders. 	



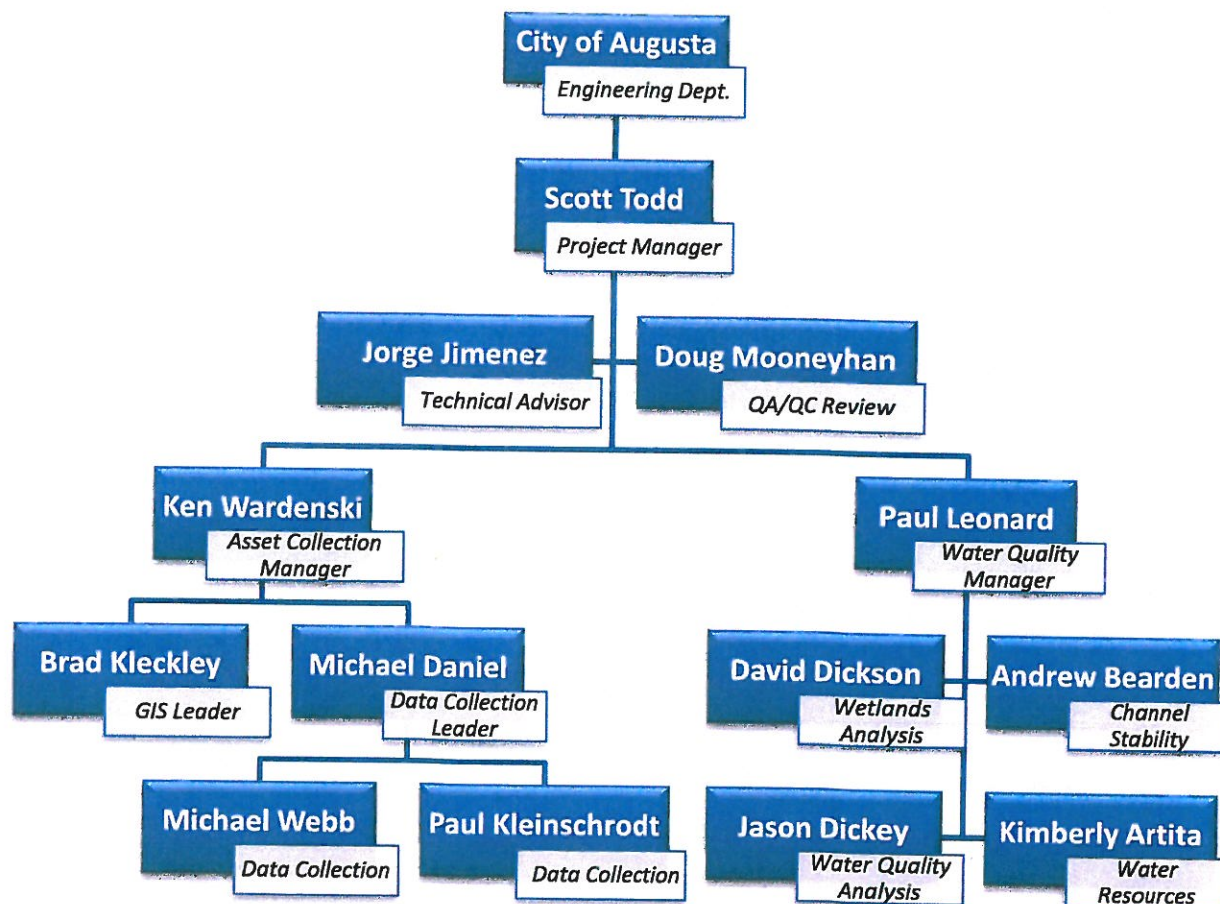
Okaloosa County (Florida) Water & Sewer Department Surface Water and Biological Monitoring Project	
Consultant Team	Constantine Engineering and Cardno ENTRIX
Client Reference	<p>Jeff Littrell – Director Okaloosa County (FL) Water & Sewer Department 1804 Lewis Turner Blvd Suite 300 Fort Walton Beach, FL 32547 (850) 651-7171 jlittrell@co.okaloosa.fl.us</p>
<p>Project Description:</p> <p>Requirements contained in the Florida Department of Environmental Protection (FDEP) operating permits for the Arbennie-Pritchett WRF (FLA485942) and the Bob Sikes WRF (FLA010181) require surface water and biological monitoring down-gradient of the effluent disposal site within adjacent or nearby waterways. Quarterly water quality and biennial SCI monitoring are required through the expiration date of the current permits.</p> <p>Since 2009, the Okaloosa County Water and Sewer Department (OCWS) has retained the team of Constantine Engineering and Cardno ENTRIX to conduct quarterly water quality monitoring events at each of the previously designated surface water sites. Samples are analyzed for the following parameters:</p> <ul style="list-style-type: none"> • pH • specific conductance • temperature • dissolved oxygen (DO) • total nitrate-nitrogen • total nitrogen (TN) • total phosphorus (TP) • ortho-phosphate • Stream Condition Index (SCI) <p>As part of this project, Constantine and Cardno ENTRIX prepare and submit quarterly reports to OCWS and FDEP to ensure permit compliance.</p>	



Augusta Utilities Department Instream Flow Study, Permitting, and Environmental Assessment for Water Withdrawal	
Consultant Team	ZEL Engineers and Cardno ENTRIX
Client Reference	Tom Wiedmeier, P.E. – Director Augusta Utilities Department 360 Bay Street, Suite 180 Augusta, GA 30901 (706) 312-4132 twiedmeier@augustaga.gov
<p>Project Description:</p> <p>ZEL Engineers and Cardno ENTRIX were retained by the City of Augusta to obtain the state and federal permits necessary for expansion of the Raw Water Pumping Station and increased water withdrawals through 2050. ZEL Engineers and Cardno ENTRIX served as the technical, regulatory, and environmental consultants responsible for assisting with the City of Augusta in all aspects of the licensing process. In order to support the license and permit applications, a broad range of technical analyses, water resource assessments, and agency consultation processes were conducted to provide a defensible basis for the proposed expansion and permits.</p> <div data-bbox="250 764 781 1157" data-label="Image"> </div> <p>In close coordination with state agencies in Georgia and South Carolina and with federal agencies, ZEL Engineers and Cardno ENTRIX designed and completed the Savannah River Instream Flow Study. The study was designed to establish the flows needed to maintain and enhance anadromous and resident fish habitat and populations, fish passage and other instream values. The study included extensive hydrologic analyses, anadromous fish passage evaluations, fisheries biological assessments, and water quality monitoring. Cardno ENTRIX provided strategic planning and technical assistance. Cardno ENTRIX also developed resource reports, negotiated with agencies, and submitted a license application in conjunction with ZEL Engineers on behalf of the City. This study used the Instream Flow Incremental Methodology (IFIM) to produce flow-habitat relations for over 20 warm water fish species in six habitat-use guilds. The study also identified the flow needs associated with recreational boating activities.</p> <p>The ZEL Engineering/Cardno ENTRIX team's ability to integrate the requirements for protection of multiple resources, with the needs of multiple stakeholders including government regulatory agencies, was vital to successfully meeting the client's needs.</p> <p>Specific scope of services included:</p> <ul style="list-style-type: none"> • Resource Studies and Agency Consultation Documents • Savannah River Instream Flow Study • Low-Flow Management Plan and automated Canal Operations Tool • Fish passage facility design and Implementation Plan • Agency negotiations on flow regime and license conditions • Hydrologic and decision-support analysis tools • Hydrologic, hydraulic, and habitat modeling • Section 7 Endangered Species Consultation • Section 106 NHPA Compliance 	

Organizational Chart

The Constantine team will commit the following task leaders to manage asset condition assessment and watershed analysis for the Augusta Engineering Department:



Key Personnel

The individuals on the proposed Constantine Team have the experience, qualifications and commitment to complete the Augusta Stormwater Inventory project:

Staff Member	Project Role	Education	Registrations & Certifications
Kimberly Artita <i>Cardno ENTRIX</i>	Water Resources and Data Management	PhD Engineering Science MS Geological Engineering BS Geology & Geophysics	EIT in NV
Andrew Bearden <i>Cardno ENTRIX</i>	Stream Stability Analysis	BS Environmental Geography	GSWCC E&S
Michael Daniel <i>ZEL Engineers</i>	Data Collection Leader	BS Agricultural Physics BS Civil Engineering	
Jason Dickey <i>Cardno ENTRIX</i>	Water Quality Analysis	MS Aquatic Ecology BS Wildlife & Fisheries Sciences	FDEP SCI

3. Project Team

David Dickson <i>Cardno ENTRIX</i>	Wetlands Evaluations	BS Urban Planning/Geography	
Jorge Jimenez <i>ZEL Engineers</i>	Senior Technical Advisor	BS Mathematics	PE in GA
Brad Kleckley <i>Constantine</i>	GIS Integration	BS Civil Engineering	PE in AL, FL
Paul Kleinschrodt <i>Constantine</i>	Data Collection	BS Civil Engineering	EIT in AL
Paul Leonard <i>Cardno ENTRIX</i>	Water Quality Manager	MS Fisheries Science/Statistics BS Aquatic Science/Biology	CFS
Adam McIntyre <i>Cardno ENTRIX</i>	Stream Stability Analysis	BS Natural Resources	CSWBMPI PWS
Doug Mooneyhan <i>Cardno ENTRIX</i>	QA/QC Manager	MS Biology BS Wildlife & Fisheries Science	CE
Scott Todd <i>Constantine</i>	Project Manager	MBA MS Civil Engineering BS Civil Engineering	CPSM PE in AL, FL, GA, LA, MS, TN
Ken Wardenski <i>ZEL Engineers</i>	Asset Collection Manager	BS Building Construction	EIT in PA MCSE
Michael Webb <i>ZEL Engineers</i>	Data Collection	BS Agricultural Physics BS Civil Engineering	

BS – Bachelor of Science

CE - Certified Ecologist

CFS – Certified Fisheries Scientist

CPSM – Certified Professional Services Marketer

CSWBMPI – Certified Stormwater BMP Inspector

EIT – Engineering Intern

*FDEP SCI – Florida Department of Environmental
Protection Stream Condition Index*

*GSWCC – Georgia Soil & Water Conservation Commission
Erosion and Sedimentation*

MBA – Master of Business Administration

MCSE – Microsoft Certified Systems Engineer

MS – Master of Science

PE – Professional Engineer

PhD – Doctorate of Philosophy

PMP – Project Management Professional

PWS – Professional Wetland Scientist

While each of these proposed key personnel have a wide range of knowledge and project experience, the resumes² in the remainder of this section focus on relevant stormwater, GIS and watershed analysis experience of our proposed task leaders..

² Resumes listed alphabetically by last name

KIMBERLY ARTITA, PHD*Water Resources and Data Management***Education:**

Doctorate of Philosophy (PhD) in Engineering Science, Southern Illinois University, 2012

Master of Science in Geological Engineering, University of Nevada, 2006

Bachelor of Science in Geology & Geophysics, University of Hawaii, 2003

Certifications and Registrations:

State of Nevada Engineer-in-Training #OT4995

Affiliations:

American Geophysical Union

American Society of Civil Engineers

Areas of Expertise:

Dr. Kimi Artita has a broad range of experience pertaining to geology, hydrology, and water resources engineering. Most recently she has been involved in stormwater and combined sewer modeling as well as data management, manipulation, and visualization. She has expertise in scientific programming including evolutionary computation and object-oriented programming, and in scientific illustration. Dr. Artita has developed algorithms for automatic calibration of watershed models in Illinois and algorithms for optimal placement of green infrastructure in Pennsylvania. She has formal training and skills in GIS (Spatial Analyst), modeling (SWAT, SWMM and individual-based modeling of organisms) and computer programming (Python, R, FORTRAN and Matlab).

Project Experience:**Stormwater**

Programmer/Data Analyst, CSO Compliance/Watershed Management Program, Philadelphia Water Department – Philadelphia, Pennsylvania

Programmer/Data Analyst, Hydrodynamic Modeling Support, Philadelphia Water Department – Philadelphia, Pennsylvania

Researcher, State/Regional Water Planning and Management – Nationwide

Researcher, Watershed-scale Stormwater Management – Illinois & Pennsylvania

ANDREW BEARDEN*Stream Stability Analysis***Education:**

Coursework completed toward Master of Science in Geography, University of Georgia, 2001
Bachelor of Science in Environmental Geography (Geology minor), Valdosta State University,
1998, Magna Cum Laude

Certifications and Registrations:

Georgia Soil & Water Conservation Commission, Level 1A Erosion & Sedimentation (E&S)
Certification #0000021912 (expires November 2012)

Areas of Expertise:

Mr. Andrew Bearden is an environmental scientist with ten plus years of professional consulting experience. He has an educational background in fluvial geomorphology with consulting experience conducting stream conditions surveys, watershed improvement planning, watershed assessments, stream restoration, and instream flow studies. He is highly skilled in conducting detailed stream surveys to identify problems and potential restoration projects. Mr. Bearden has personally assessed 500+ stream miles in Georgia, North Carolina, and California, and Ohio. Mr. Bearden served as one of the lead designers on two stream restoration projects, which totaled over 1,000 linear feet. Mr. Bearden also has extensive experience working for the FERC, managing third party compliance monitoring programs for gas pipeline construction. He has helped managed five of these projects across the southeast, northwest, and northeast.

Project Experience:**Geographic Information Systems (GIS)**

GIS Technician, Augusta Canal Hydropower Project FERC Licensing - Savannah River, Georgia

Water Quality Studies

Project Manager, Allatoona Creek Stream Restoration – Cobb County, Georgia

Project Manager, City of Jesup Watershed Assessment – Wayne County, Georgia

Deputy Project Manager/Technical Consultant, Implementation of the Upper Yellow River Watershed Improvement Plan – Gwinnett County, Georgia

Project Manager, Watershed Assessment Monitoring Plan – Garden City, Georgia

Task Manager, Watershed Assessment for South Bryan County – Bryan County, Georgia

Task Manager, Lower Yellow River and No Business Creek Watershed Improvement Plan – Gwinnett County, Georgia

Task Manager/Technical Consultant, Upper Yellow River and Sweetwater Creek Watershed Improvement Plan – Gwinnett County, Georgia

JASON DICKEY*Water Quality Analysis***Education:**

Master of Science in Aquatic Ecology, Auburn University, 2006

Bachelor of Science in Wildlife & Fisheries Sciences, University of Tennessee, 2002

Certifications and Registrations:

Federal 10(A) Scientific Collection Permit for 7 Listed Mussel Species in the Apalachicola/Chattahoochee/Flint River Basins in GA/FL.

FDEP Certifications: Stream Condition Index, BioRecon, Habitat Assessment, Periphyton Sampling Certification

HAZWOPER Certification

CPR

Wilderness Emergency Care

Affiliations:

Freshwater Mollusk Conservation Society

American Fisheries Society

Society of Environmental Toxicology & Chemistry

Florida Lake Management Society

National Lake Management Society

Florida Association of Environmental Professionals

Areas of Expertise:

Mr. Jason Dickey is an aquatic ecologist with over 10 years professional experience in the assessment of freshwater and marine ecosystems. His work focuses on aquatic monitoring and bioassessment for permit support and compliance, Total Maximum Daily Load (TMDL) issues, listed species surveys, and aquatic habitat restoration. Mr. Dickey currently serves as project manager for a variety of studies ranging from National Environmental Policy Act (NEPA) Environmental Assessments (EA) to Natural Resource Damage Assessment (NRDA) for biota and habitats. His responsibilities include agency consultation, project coordination, and management of staff and sub-contractors.

Project Experience:**Water Quality Analysis**

Project Manager – City of Tallahassee Ambient Surface Water Monitoring – Leon County, Florida

Project Manager – Suwannee River Water Management District Surface Water Monitoring Program – Florida

Project Manager – Statewide Water Quality Monitoring for FDEP Strategic Monitoring Program for TMDL Rule Development – Throughout Florida

Project Manager – Lead Assessment and Migration Study – Gadsden County, Florida

Project Coordinator – Deepwater Horizon Incident and Oil Spill – BP Exploration and Production Inc. (BP) – Gulf of Mexico Region

Project Manager – NEPA EA, Reynold's Landing – Seminole County, Georgia

Project Manager – NEPA EA, Bainbridge Waterfront – Decatur County, Georgia

Project Manager – Attainment of Wetland Dredge and Fill and GADNR Stream Buffer Variance Permits for Bainbridge Waterfront – Decatur County, Georgia

Project Manager – Suwannee River Bio-Monitoring – Suwannee County, Florida

Project Manager – Little Wekiva River Bio-Monitoring – Seminole County, Florida

DAVID DICKSON*Wetlands Evaluations***Education:**

Bachelor of Science in Urban Planning/Geography, Florida State University, 1991

Certifications and Registrations:

ASHI, CPR and AED, 2011 (Updated 2012)

Affiliations:

NAEP –Elected Board Member

TAEP – Treasurer

FEPA - Environmental Committee Chair

SAME – Mobile, Emerald Coast, & Jacksonville Posts

ELULS of the Florida Bar

Areas of Expertise:

Mr. David Dickson has over 21 years of experience as a natural resource professional who specializes in the assessment of ecosystems throughout the Southeast. His expertise includes mitigation banking, wetland mitigation design and construction oversight, post-construction and compliance monitoring, wetland delineation, environmental permitting, environmental analysis for transportation and energy pipeline projects, preliminary site evaluations, wildlife assessments, listed species permitting, and project management. He has conducted ecological assessments and baseline determinations necessary to identify ecological constraints for wetlands and listed species on a variety of projects. Additionally, he has extensive experience working with federal, state and local government staff and providing QA/QC reviews.

Project Experience:**Wetlands and Watersheds**

Project Manager – Greens Creek Mitigation Bank, Clay County, Florida

Lead Ecologist – Mitigation Bank Evaluation, Florida Parishes, Louisiana

Project Manager and Lead Ecologist – Mitigation Bank Evaluation, Orleans, Jefferson, and St. Bernard Parishes, Louisiana

Project Manager – Proposed Wetland Mitigation Bank, Leon and Gadsden Counties, Florida

Project Manager – St. Johns Mitigation Bank, St. Johns County, Florida

Project Manager – Regional Off-site Mitigation Areas, Duval and Clay Counties, Florida

Project Manager – District-wide Mitigation Maintenance & Monitoring, FDOT District 6, Miami-Dade and Monroe Counties

JORGE JIMENEZ, PE*Technical Advisor***ZEL** ENGINEERS**Education:**

Bachelor of Science in Mathematics, Augusta State University, 1972

Certifications and Registrations:

State of Georgia Professional Engineer, Registration No. 15694

Affiliations:

American Society of Civil Engineers

American Council of Engineering Companies

America Public Works Association, American Water Works Association

Federal Water Pollution Control Association

National Society of Professional Engineers

Areas of Expertise:

Mr. Jiménez is experienced in all aspects of water works and public works having served the City of Augusta for 14 years as its design engineer prior to joining ZEL Engineers in 1986. Jorge worked as Project Manager for the last two major expansions of the Columbia County Blanchard Water Plant and for the Constructed Wetlands projects at Augusta and Lavonia, GA. He provides continuity to ZEL's municipal clients and presently works closely with Augusta and the Columbia County Water System and the City of Lavonia, GA. He provided coordination and management of design activities performed by engineering consultants for Augusta in the field of public works and municipal utilities. He was in charge of the development of Horizon South Industrial Park in Columbia County from 1990 to 1998. Mr. Jimenez has provided construction management to dozens of successful projects for clients in his 24 years at ZEL

Relevant Project Experience:**Stormwater**

Project Manager, East Boundary Storm Drainage, Richmond County, Georgia

Project Manager, Sand Bar Ferry Storm Water Outfall, Augusta (GA) Utilities Department

Project Manager, Second Street Storm Water Project, Augusta-Richmond County Public Works

Project Manager, Turknett Springs Improvements, Augusta-Richmond County Public Works

Project Manager, East Augusta Drainage Improvements Phase III – Laney Walker to East Boundary, Augusta-Richmond County Public Works

Project Manager, East Augusta Drainage Improvements Phase II - Hornsby Subdivision, Augusta-Richmond County Public Works

Project Manager, East Augusta Drainage Improvements Study and Phase I – Laney Walker Viaduct, Augusta-Richmond County Public Works

Geographic Information Systems (GIS)

Project Manager, Geographic Information System Base Mapping and Monumentation, Columbia County (GA) Water and Sewerage System

Water Resources

Project Principal – Augusta Canal Hydropower Project, Savannah River Basin Comprehensive Study, City of Augusta — Savannah River, Georgia and South Carolina

BRAD KLECKLEY, PE*GIS Leader***Education:**

Bachelor of Civil Engineering, Auburn University, 1995

Certifications and Registrations:

State of Alabama Professional Engineer, Registration No. 24450

State of Florida Professional Engineer, Registration No. 65289

Affiliations:

Water Environment Federation

Area of Expertise:

Mr. Kleckley has extensive experience and knowledge in information management application development, systems integration, GIS mapping, hydraulic modeling and capacity analysis, master planning, wastewater collection and treatment systems analysis, and regulatory program development.

Relevant Project Experience:**Geographic Information Systems (GIS)**

Project Manager, Manhole Condition Assessment and Mapping Program, Jefferson County (AL)
Environmental Services Department

Project Engineer, Lowndes County Waterline Mapping, South Central Alabama Regional Planning
Commission

Project Manager, Water System GIS, Alabaster (AL) Water Board

Project Manager, Water System GIS, Leeds (AL) Waterworks

Project Manager, Water System GIS, Odenville (AL) Waterworks

Technical Advisor, Mobile County (AL) Water, Sewer & Fire Protection Authority Water
Distribution System GIS

Technical Advisor, Riviera Utilities (AL) Water and Sewer GIS

Technical Advisor, South Alabama Regional Planning Commission (SARPC) Escambia County,
Alabama Waterline Mapping

Technical Advisor, Waterworks and Sewer Board of the City of Prichard (AL) Water and Sewer
GIS

PAUL KLEINSCHRODT, EIT*Asset Data Collection***Education:**

Bachelor of Civil Engineering, University of South Alabama, 2010

Certifications and Registrations:

State of Alabama Engineering Intern

Affiliations:

American Society of Civil Engineers (ASCE)

Society of American Military Engineers (SAME)

NASSCO Certified for PACP, MACP and LACP

Relevant Project Experience:**Stormwater**

Project Engineer, Mitsubishi Polycrystalline Silicon America Corporation (AL) NPDES Stormwater Permitting and Compliance Inspections

Project Engineer, Mitsubishi Polycrystalline Silicon America Corporation (AL) Stormwater Management Plan Update

Geographic Information Systems (GIS)

Project Engineer, LeMoyne (AL) Water System, Inc. Water GIS Development

Project Engineer, South Alabama Regional Planning Commission (SARPC) Escambia County, Alabama Waterline Mapping

Project Engineer, Waterworks and Sewer Board of the City of Prichard (AL) Water and Sewer GIS

PAUL LEONARD*Water Quality Manager***Education:**

Master of Science in Fisheries Science, Virginia Polytechnic Institute & State University, 1983
Bachelor of Science in Aquatic Science/Biology, Allegheny College, 1978

Certifications and Registrations:

American Fisheries Society, Certified Fisheries Scientist

Affiliations:

American Fisheries Society (AFS)
Society for Ecological Restoration (SER)
Water Environment Federation (WEF)
Georgia Water & Pollution Control Association (GWPCA)

Areas of Expertise:

Mr. Paul Leonard is a senior project manager and Certified Fisheries Scientist with 25 years of experience managing and performing environmental assessments, restoration, and permitting related to energy, utility, transmission, land, and water resource development projects. Mr. Leonard regularly manages the activities of multi-disciplinary teams of fisheries biologists, hydrologists, water quality experts, planners, recreation specialists, and other environmental and resource specialists on large and complex projects. A well-regarded team leader, he directs major assignments with complex requirements for agency consultation, regulatory approvals, and alternative analysis.

Mr. Leonard is a water resource specialist a recognized national expert in hydroelectric project licensing, NEPA compliance, watershed studies, and instream flow investigations. His watershed planning experience includes watershed characterization and study design, GIS mapping and analysis, water quality and hydrologic analysis and modeling, stream habitat and biological assessment, non-point source pollution BMPs and control strategies, managing expert panels and consensus-building. Mr. Leonard has provided permitting and licensing support for hydroelectric, fossil plants, municipal water withdrawals, natural gas pipeline, and private developments in over 18 states, primarily in the Southeast and Mid-Atlantic regions, including large coastal and riverine projects.

Project Experience:**Water Resources**

Project Principal - Augusta Canal Hydropower Project, Savannah River Basin Comprehensive Study, City of Augusta — Savannah River, Georgia and South Carolina

- Project Manager - Tennessee Valley Authority (TVA) Reservoir Operations Study Programmatic Environmental Impact Statement - TN, NC, AL, MS, KY, VA
- Project Manager — Lloyd Shoals Hydroelectric Project Relicensing, Georgia Power Company — Ocmulgee River, Georgia
- Project Principal — Water Withdrawal and Storage Reallocation Studies from USACE, Savannah District, J. Strom Thurmond Reservoir — City of Lincolnton, Georgia
- Project Principal — Water Withdrawal and Storage Reallocation Studies from USACE, Savannah District, J. Strom Thurmond Reservoir — City of Thompson, McDuffy County, Georgia
- Project Manager — Support for Legal Challenge to Power Plant Water Withdrawal, Georgia Power Company — Chattahoochee River, Georgia
- Project Principal - Gwinnett County Watershed Improvement Plans (WIPs) — Gwinnett County, Gwinnett County, Georgia
- Project Principal - Mobile District USACE Ecosystem Restoration Projects - Butler, Proctor, and Allatoona Basins — USACE and Cobb County, Cobb County, Georgia
- Project and Task Manager - Metro Atlanta Watershed Assessments and Management Plans — Metro Atlanta Counties, Georgia

ADAM MCINTYRE*Stream Stability Analysis***Education:**

Bachelor of Science in Natural Resources with Coastal Process Concentration & Minor in Environmental Studies, NC State University, 1999

Certifications and Registrations:

Certified Stormwater BMP Inspector
Professional Wetland Scientist

Affiliations:

Vice President of the North Carolina Environmental Restoration Association
National Association of Environmental Professionals
Society of Professional Wetland Scientists

Areas of Expertise:

Mr. McIntyre has been in the environmental resource management business for 13+ years, specializing in the identification, planning, design, permitting and construction of mitigation sites throughout the Southeast. In addition to mitigation Mr. McIntyre has been active in reviewing land tracts to identify potential environmental hurdles, assist in the planning and development of various projects to maximize land value and protect environmental features, and the permitting of those sites to expedite the development process. Mr. McIntyre has successfully completed over 200+ mitigation, permitting, and delineation projects throughout North Carolina (80+ counties), South Carolina (10 counties), Tennessee (3 counties), New Jersey (2 counties) as well as reviewing opportunities in Florida, Georgia, Kentucky, Louisiana, Ohio, and Texas. Mr. McIntyre has used his technical experience and personal/professional skills to develop partnerships and relationships with government officials, clients, designers, and potential investors in the mitigation arena. Mr. McIntyre has been involved in developing reference stream attributes and regional curves for the North and South Carolina Piedmont and Coastal Plain hydrophysiographic provinces. Mr. McIntyre has attended the four fluvial geomorphology Natural Channel Design courses offered by Dave Rosgen along with presenting at workshops / conferences involving stream and wetland mitigation. Mr. McIntyre maintains experience in all phases of stream restoration planning, design, construction, and monitoring.

Project Experience:**Stormwater**

Project Manager — Multiple Stormwater Best Management Practices (Constructed Wetland), North Carolina

Stream and Wetland Restoration

Project Manager — Monteith Park Mitigation Site, North Carolina

Project Scientist — Roanoke, Yadkin, and Neuse River Basin Stream Restoration Site Searches, North Carolina

Project Manager — Little Chatata Creek Relocation, Tennessee

Project Manager — McCullough Development Stream and Wetland Restoration, North Carolina

Project Manager — UT to Jumping Run, North Carolina

Project Manager — Cane Creek Stream and Wetland Restoration, North Carolina

Project Scientist — Back Creek Stream Restoration, North Carolina

Construction Manager/Supervisor — UT to Hadley Creek Stream and Wetland Restoration, North Carolina

Construction Manager — Anson County (BFI) Landfill Stream Mitigation Site, North Carolina

Project Scientist/Construction Manager — ABC Mitigation Site, North Carolina

Project Scientist — North Carolina Coastal Plain Hydrophysiographic Region Curves

DOUG MOONEYHAN*QA/QC Manager***Education:**

Master of Science in Biology, Tennessee Technological University, 1989

Bachelor of Science in Wildlife & Fisheries Science, University of Tennessee, 1987

Certifications and Registrations:

Certified Ecologist, The Ecological Society of America

Certified, Health and Safety for Hazardous Waste Operations, OSHA

FERC Environmental Review and Compliance for Natural Gas Facilities

Areas of Expertise:

Doug Mooneyhan is a certified ecologist and project scientist with over 22 years of experience managing and performing environmental studies with emphasis on water and natural resources projects. Mr. Mooneyhan has worked with inter-disciplinary teams to perform a variety of projects. His particular areas of experience include preparation of environmental assessments and environmental impact statements, pipeline construction monitoring, fisheries biology, water quantity/water quality, aquatic macroinvertebrate and stream habitat surveys, instream flow studies, sampling and analysis of soils, surface water and sediments, contaminant assessment of hazardous waste sites, ecological risk assessment, and hydropower project licensing. Mr. Mooneyhan has worked and has significant project experience in diverse geographic locations in the United States.

Project Experience:**Stormwater****Water Resources**

Augusta Canal Headgates Environmental Assessment – Georgia

Augusta Canal Hydropower Project FERC Application – Georgia and South Carolina

Savannah River Instream Flow Study - Georgia

Mussel Survey of Selected Reaches of the Altamaha River - Georgia

Aquatic Assessment of Little Attapulgus Creek – Georgia

Ecological Risk Assessments of the Ocmulgee River (Macon, Georgia) and Oostanaula River (Rome, Georgia)

Ecological Risk Assessment of an Industrial Site in Savannah, Georgia

Ecological Risk Assessment at a former Industrial Facility in Brunswick, Georgia

SCOTT R. TODD, PE, MBA*Project Manager***Education:**

Master of Business Administration, Georgia State University, 1999

Master of Science in Civil Engineering, Auburn University, 1996

Bachelor of Civil Engineering, Auburn University, 1994

Certifications and Registrations:

Certified Professional Services Marketer (CPSM)

State of Alabama Professional Engineer, Registration No. 24539

State of Florida Professional Engineer, Registration No. 63264

State of Georgia Professional Engineer, Registration No. 26353

State of Louisiana Professional Engineer, Registration No. 17222

State of Mississippi Professional Engineer, Registration No. 17222

State of Tennessee Professional Engineer, Registration No. 114404

Affiliations:

American Water Works Association (AWWA)

Georgia Association of Water Professionals (GAWP)

Society for Marketing Professional Services (SMPS)

Society of American Military Engineers (SAME)

Water Environment Federation (WEF)

Areas of Expertise:

Mr. Todd has over 17 years of engineering consulting experience, encompassing all phases of water, wastewater and stormwater utility projects, including master planning, preliminary engineering, feasibility studies, modeling, process design, hydraulic design, construction administration, and public education programs. He has managed large-scale capital improvement programs from negotiations with federal and state regulatory agencies and planning for regulatory compliance, to financial planning for capital improvement program budgeting and public relations campaigns. In addition to traditional engineering consulting, Mr. Todd has expertise in asset management, including GPS surveying and GIS database development; development of Capacity, Management, Operations and Maintenance (cMOM) plans for sanitary sewer systems; and implementation of Work Order/Computer Maintenance Management Systems (CMMS). He has also assisted utilities and industries with environmental permitting and regulatory compliance, including NPDES and air quality

permitting; Spill Prevention Control and Countermeasures (SPCC) plans; Environmental Assessments (EA's) and Construction Best Management Practices Plans (CBMPP's).

Project Experience:

Stormwater

Project Manager, Mitsubishi Polycrystalline Silicon America Corporation (AL) NPDES Stormwater Permitting and Compliance Inspections

Project Manager, Mitsubishi Polycrystalline Silicon America Corporation (AL) Stormwater Management Plan Update

Project Engineer, Oconee (GA) Electric Membership Cooperative Drainage and Containment Storage Evaluation

Project Engineer, Wayne Farms Poultry, LLC (AL) Stormwater Treatment Improvements

Geographic Information Systems (GIS)

Project Manager, City of Robertsdale (AL) Water and Sewer GIS Development

Project Manager, LeMoyné (AL) Water System, Inc. Water GIS Development

Project Engineer, Mobile (AL) Area Water & Sewer System Sewer GIS Conversion and Field Inventory

Project Manager, Mobile County (AL) GIS Integration and Customization

Project Manager, Mobile County (AL) Water, Sewer & Fire Protection Authority Water Distribution System GIS

Project Manager, Riviera Utilities (AL) Water and Sewer GIS

Technical Advisor, South Alabama Regional Planning Commission (SARPC) Escambia County, Alabama Waterline Mapping

Project Manager, Waterworks and Sewer Board of the City of Prichard (AL) Water and Sewer GIS

Water Quality Studies

Project Engineer, Charoen Pokphand, Inc. (now Keystone Foods) (AL) Water Quality Modeling

Project Manager, City of Foley (AL) – Riviera Utilities Water Quality Sampling and Monitoring

Project Manager, Jefferson County (AL) Cahaba River Modeling Study

Project Engineer, Mobile (AL) Area Water & Sewer System Surface Water Quality Studies

KEN WARDENSKI, EIT, MCSE*Asset Collection Manager***ZEL** ENGINEERS**Education:**

Bachelor of Science in Building Construction, Penn State University, 1982

Certifications and Registrations:

State of Pennsylvania Engineering Intern

Microsoft Certified Systems Engineer (MSCE)

Areas of Expertise:

Mr. Wardenski is a Staff Engineer with ZEL Engineers and provides design and technical support in Civil Engineering projects. Ken has over 25 years of experience in serving municipal, industrial and commercial clients in the areas of roadway, water, sewer and drainage design.

Relevant Project Experience:**Stormwater**

Project Engineer, East Boundary Storm Drainage, Richmond County, Georgia

Project Engineer, Second Street Storm Water Project, Augusta-Richmond County Public Works

Project Engineer, Turknnett Springs Improvements, Augusta-Richmond County Public Works

Project Engineer, East Augusta Drainage Improvements Phase III – Laney Walker to East Boundary, Augusta-Richmond County Public Works

Project Engineer, East Augusta Drainage Improvements Phase II - Hornsby Subdivision, Augusta-Richmond County Public Works

Project Engineer, East Augusta Drainage Improvements Study and Phase I – Laney Walker Viaduct, Augusta-Richmond County Public Works

Geographic Information Systems (GIS)

Project Engineer, Geographic Information System Base Mapping and Monumentation, Columbia County (GA) Water and Sewerage System

Water Resources

Project Engineer, Augusta Canal Hydropower Project, Savannah River Basin Comprehensive Study, City of Augusta — Savannah River, Georgia and South Carolina

4. Related Experience and Success

Similar Project Experience

Constantine, ZEL and Cardno ENTRIX have each completed many projects involving infrastructure condition assessments, GPS surveying, GIS mapping and water quality analyses. While it is not practical to list all such projects, the matrix below summarizes representative experiences similar to the Augusta Stormwater Inventory scope of work:

Consultant	Project Title <i>Client</i>	Condition Assessments	GPS Surveying – GIS Mapping	Water Quality Analysis
Constantine Engineering	Wastewater and Stormwater Reuse Water Quality Study <i>Riviera Utilities – Foley, Alabama</i>		✓	✓
	Wastewater System GIS <i>Riviera Utilities – Foley, Alabama</i>	✓	✓	
	Water and Wastewater Systems GIS <i>Prichard (AL) Waterworks and Sewer Board</i>	✓	✓	
	Manhole Condition Assessments and Mapping <i>Emerald Coast Utilities Authority – Pensacola, FL</i>	✓	✓	
	Wastewater System Condition Assessment and Mapping <i>Decatur (AL) Utilities</i>	✓	✓	
	Clean Watershed Needs Survey (2004 and 2008) <i>Alabama Department of Environmental Management</i>	✓		✓
	Manhole Surveying and Mapping Program <i>Jefferson County (AL) Environmental Services Department</i>	✓	✓	
	Water Quality Monitoring Program <i>Okaloosa County (FL) Water and Sewer Department</i>		✓	✓
	Augusta Canal Water Withdrawal Permitting and FERC Licensing <i>Augusta (GA) Utilities Department</i>	✓	✓	✓
ZEL Engineers	Second Street Storm Water Project <i>Augusta-Richmond County Public Works</i>	✓	✓	
	Turknett Springs Improvements <i>Augusta-Richmond County (GA) Public Works</i>	✓	✓	
	East Augusta Drainage Improvements Phases I, II and III <i>Augusta-Richmond County (GA) Public Works</i>	✓	✓	
	GIS Base Mapping and Monumentation <i>Columbia County (GA) Water and Sewerage System</i>	✓	✓	

4. Related Experience and Success

Cardno ENTRIX	Augusta Canal Water Withdrawal Permitting and FERC Licensing <i>Augusta (GA) Utilities Department</i>	✓	✓	✓
	Allatoona Creek Stream Restoration <i>Cobb County, Georgia</i>		✓	✓
	Watershed Assessment <i>City of Jesup, Georgia</i>		✓	✓
	Implementation of Upper Yellow River Watershed Improvement Plan <i>Gwinnett County, Georgia</i>		✓	✓
	Lower Yellow River and No Business Creek Watershed Improvement Plan <i>Gwinnett County, Georgia</i>		✓	✓
	Upper Yellow River and Sweetwater Creek Watershed Improvement Plan <i>Gwinnett County, Georgia</i>		✓	✓
	Watershed Assessment Monitoring Plan <i>City of Garden City, Georgia</i>		✓	✓
	Watershed Assessment for South Bryan County <i>Bryan County, Georgia</i>		✓	✓

Client References

Constantine, ZEL and Cardno ENTRIX have provided a broad range of engineering and environmental services for the clients listed in the table below. We encourage the City of Augusta to contact these references to learn how they have benefited from partnering with our firms.

Constantine Engineering Client References	
Mr. Tom Wiedmeier, P.E. Director Augusta Utilities Department 360 Bay Street, Suite 180 Augusta, GA 30901 (706) 312-4160 twiedmeier@augustaga.gov	Mr. Montie Walters Utilities Director City of Warner Robins 700 Watson Blvd. Warner Robins, GA 31099 (478) 929-1933 mwalters@warnerrobinsga.gov
Mr. Jeff Littrell Director Okaloosa County Water and Sewer 1804 Lewis Turner Blvd. Ft. Walton Beach, FL 32547 (850) 651-7171 jlittrell@co.okaloosa.fl.us	Mr. Tom Cleveland, P.E. Engineering Manager Decatur Utilities 1002 Central Parkway, S.W. Decatur, Alabama 35609 (256) 301-4605 tcleveland@decaturutilities.com
Mr. Stephen Sorrell, P.E. Executive Director Emerald Coast Utility Authority 9255 Sturdevant St. Pensacola, FL 32514 (850) 969-3300 sorrell@ecua.org	Mr. Richard Peterson, P.E. Manager – Gas, Water and Wastewater Riviera Utilities 413 East Laurel Avenue Foley, AL 36535 (251) 970-4146 rpeterson@riviera-utilities.com

4. Related Experience and Success

ZEL Engineers Client References

Mr. Tom Wiedmeier, P.E.
Director
Augusta Utilities Department
 360 Bay Street, Suite 180
 Augusta, GA 30901
 (706) 312-4160
twiedmeier@augustaga.gov

Mr. William Clayton
Director
Columbia County Water & Sewerage System
 P.O. Box 204660
 Martinez, GA 30917
 (706) 863-6928
bcclayton@columbiacountyga.gov

Mr. Joseph C. Berry, P.E.
County Engineer
Aiken County Public Works
 828 Richland Ave., W
 Aiken, SC 29801
 (803) 642-1535

The Honorable Ralph Owens
Mayor
City of Lavonia
 12221 Augusta Rd.
 Lavonia, GA 30553
 (706) 356-8781

Cardno ENTRIX Client References

Mr. Jeff Littrell
Director
Okaloosa County Water and Sewer
 1804 Lewis Turner Blvd.
 Ft. Walton Beach, FL 32547
 (850) 651-7171
jlittrell@co.okaloosa.fl.us

Mr. Pete Wright, P.E.
Water Resources Department
Gwinnett County
 684 Winder Highway
 Lawrenceville, GA 30045
 (678) 376-6948
pete.wright@gwinnettcounty.com

Mr. Chuck Youmans
Stormwater Management
Cobb County
 100 Cherokee Street
 Marietta, Georgia 30090
 (770) 419-6438
chuck.youmans@cobbcounty.org

Kirk D. Croasmun, PE
Engineering and Inspections
Bryan County
 66 Captain Matthew Freeman Drive, Suite 201
 Richmond Hill, GA 31324
 912-756-7953
kcroasmun@bryan-county.org

Project Understanding and Approach

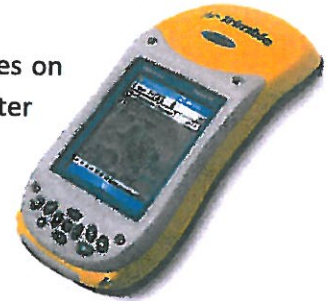
The Augusta Engineering Department (AED) is developing a watershed-based stormwater management program for Augusta-Richmond County. Initial steps in this process include inventorying and assessing existing stormwater infrastructure; characterizing current water quality in streams and wetlands; and recommending stormwater best management practices (BMPs) and capital improvements to enhance water quality, protect aquatic diversity and mitigate flooding. These improvements will be funded by a Stormwater Utility Fee and Services Program being developed by AED through subsequent professional services contracts.

To meet AED's goals and objectives, the Constantine project team will combine elements of recent successful projects into the following comprehensive, efficient approach to the Augusta Stormwater Inventory project:

Asset Collection Services

Field Data Inventory

- The Asset Collection Manager will pre-load AED's data dictionaries on mobile data collection devices to collect attributes for stormwater infrastructure features as listed on pages 30-33 of the RFQ.
- The Data Collection Leader will coordinate schedules and work areas (hydrologic basins) with AED staff, and oversee field crews surveying, photographing and inventorying stormwater infrastructure features.
- AED anticipates that 10% of GPS data collection will be survey grade (i.e., sub-centimeter accuracy) and the remaining 90% will be mapping grade (i.e., sub-foot accuracy).
 - Survey grade data will be collected using Leica System 1200 Smart Station RTK GPS hardware with data collection System 1200 Version 1.52 firmware.
 - Mapping grade data will be collected using Trimble GeoXT hardware with Pathfinder data collection software and TerraSync data transfer software.
 - All collected data will be post-processed using local CORS data stations for increased data accuracy and precision.



GIS Integration

- Using system maps and as-built record drawings provided by AED for reference, the GIS Leader will process field data into a connected Esri ArcGIS geodatabase format.
 - Digital photographs of stormwater assets will be organized in an electronic directory linked to this geodatabase.
- Stormwater infrastructure geodatabases and raw data will be provided to AED's GIS group on a bi-monthly delivery schedule agreed upon in advance.

Floodplain Assessment

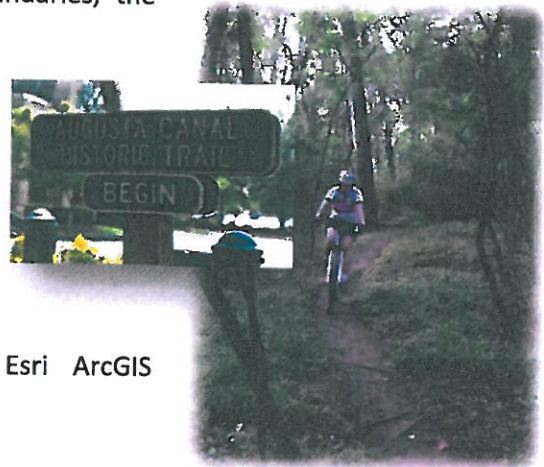
- The Flood Mitigation Leader will work with AED staff to identify floodplain mapping needs in each basin, including transect intervals.
- The Field Crews will establish control points, photograph floodplain features, and perform floodplain transects (cross sections) on regular intervals.
- The GIS Leader will process collected floodplain data into an Esri ArcGIS geodatabase format, including offsets and survey grade elevations.
 - Digital photographs of floodplain features will be organized in an electronic directory linked to this geodatabase.
- Floodplain geodatabases and raw data will be provided to AED's GIS group on a delivery schedule agreed upon in advance.

Watershed Boundary Updates

- Using existing water boundary maps provided by AED for reference and collected stormwater infrastructure feature data, the GIS Leader will refine watershed and subwatershed boundaries in Esri ArcGIS geodatabase format.
- Refined watershed and subwatershed boundary geodatabases and raw data will be provided to AED's GIS group on a delivery schedule agreed upon in advance.

Recreational Trails

- After updating watershed and floodplain boundaries, the Constantine project team will develop conceptual recreational trails to accommodate jogging, walking, biking, hiking and birding activities.
- Concepts for trails will include signage identifying flora, fauna and natural features, as well as route and distance markings.
- The Constantine project team will present conceptual trail layouts to AED staff in Esri ArcGIS geodatabase format for review.



Water Quality Characterization

Historical Data Review

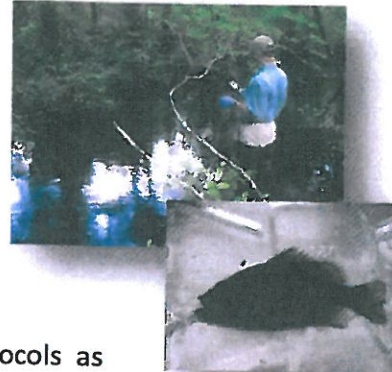
- The Constantine project team will work with AED staff to review and evaluate all available historical data.
- The analysis is intended to identify any data gaps and to assist with identifying critical areas of concern.
- Our team will work with AED to catalog and archive the data in an on-line database for easy access by department staff.

Receiving Waters Evaluation

- The Water Quality Manager will select areas to be evaluated for channel stability within the specific watershed.
- The data collected will document current conditions and will be utilized to identify areas of concern regarding erosion and channel stability within each receiving water.
- The locations of the stations and any areas of concern will be collected via GPS and provided to the AED GIS staff and will be included in the GIS database developed under the inventory tasks.
- Digital photographs of the receiving waters will be organized in an electronic directory linked to the GIS database.

Water Quality Analysis

- The Water Quality Manager will review the specific watershed to determine if existing water quality monitoring stations need to be adjusted or if new ones need to be established.
- Our field teams will conduct sampling during critical conditions (*i.e.*, low flow, high temperature) and during both wet and dry weather events.
- The Constantine project team will conduct water quality sampling and analysis will be conducted consistent with established Georgia EPD sampling protocols as outlined in the *Watershed Assessment and Protection Plan Guidance*, March 2005 (including the 16 water quality parameters listed in Part I.III).
- Biological monitoring will be consistent with the protocols outlined in Part I.IV of the *Watershed Assessment and Protection Plan Guidance*, March 2005.
- The biomonitoring and water quality station locations and data will be linked to the GIS database established for this project.



Rain Gauge and Water Quality Networks

- The Water Quality Manager will review the specific watershed to determine if existing rain gauge and water quality monitoring stations need to be adjusted or if new ones need to be established.
- Continuous recording samplers will be installed to collect rain and water quality data.
- A network will be established to collect the data real time and stream it on-line for continuous access by AED staff.
- The stations and data will be linked to the GIS database.



BMP Evaluation

- The Water Quality Manager will review the specific watershed, historic data, and the baseline data collected to evaluate existing BMPs and identify areas that would benefit from the implementation of short-term and long-term BMPs.
- Recommendations will be made on ways to improve existing BMPs or where to implement BMPs including types and priorities.
- Examples of BMPs to be evaluated include , but are not limited to, the following:
 - Structural BMPs:
 - Re-vegetate areas
 - Restoration of riparian areas and stream banks
 - Retrofit stormwater detention/retention ponds
 - Adjust control structures and outfalls
 - Control storm flow and velocity in ditches and other conveyance features
 - Septic tank maintenance and repair
 - Non-structural BMPs:

4. Related Experience and Success

- Public Awareness – a component that will be used to enhance public understanding and participation in implementing the plan
 - Stakeholder Meetings
 - Workshops
 - Continuous Education
 - Brochures
- Outreach Programs
 - Adopt-a-stream
- Stream Walks
- Illicit Discharge Detection & Elimination (IDDE) Program
- Operation and Maintenance Program for the MS4
- Erosion and Sedimentation (E&S) inspections
- The location of areas where BMPs are proposed will be provided to AED in Esri ArcGIS geodatabase for review.
- The BMP evaluation will be conducted in conjunction with the Southeastern Natural Sciences Academy.

Wetland and Stream Buffer System Evaluation

- The Wetland Analysis Leader will review the specific watershed to evaluate and document the current buffers along wetlands, streams, and other water bodies.
- Current trends will be analyzed and recommendations will be made regarding ways to maintain, improve or connect the buffer systems.
- The methods to be evaluated will include, but not be limited to, the following:
 - Buffer ordinances
 - Land acquisitions
 - Fencing
 - Signage
 - Passive buffers
 - Recreational trails
- The buffer system evaluation will be conducted in conjunction with the Southeastern Natural Sciences Academy.

Flood and Pollutant Mitigation

- Historic data and baseline data collected will be reviewed to identify areas that flood and pollutant sources requiring control and management.
- Recommendations will be made by our team that will aid in reducing current levels.
 - These will include the structural and non-structural BMPs evaluated under this project.
 - The locations will be provided to AED staff in an Esri ArcGIS geodatabase format for review.
- The flood and pollutant reduction evaluations will be conducted in conjunction with the Southeastern Natural Sciences Academy.

Aquatic Diversity Evaluation

- The Water Quality Manager will evaluate the current aquatic diversity of the watershed and compare it to the historic available data to identify changes and trends overtime.

- The Water Quality Manager will evaluate all the methods under the water quality characterization services to develop an overarching approach to maintain and enhance to the overall aquatic diversity within each system and watershed.
- The aquatic diversity evaluations will be conducted in conjunction with the Southeastern Natural Sciences Academy.

Channel Integrity Evaluation

- An automated screening tool will be integrated with GIS to assist in identifying areas of concern related to channel integrity.
- A site reconnaissance will be conducted to evaluate areas identified during preliminary screening.
- Should it be necessary and at the direction of AED staff, our project team will conduct a 2-D Hydraulic Flow/BSTEM (Bank Stability and Toe-Erosion Model) study for areas of critical concern.
- The Stream Stability Leader will develop conceptual level designs for areas that currently require improvement or may require improvement in the future along with recommendations for prioritization to AED.
 - Examples of improvements may include the realignment of a channelized stream utilizing Natural Channel Design Principles, bank stabilization or grade control practices.
- The channel integrity evaluations will be conducted in conjunction with the Southeastern Natural Sciences Academy.

Wetlands Evaluation

- After reviewing historical data and collecting additional water quality data, the Wetland Analysis Leader will review the watershed to refine the boundaries and locations of all wetlands and update the current conditions (*i.e.*, functions and values).
 - The data collected will be included in the archive and linked to the GIS database.
 - Digital photographs of the wetlands will be organized in an electronic directory linked to the GIS database.
- The Wetland Analysis Leader will make recommendations on ways to maintain or improve the water quality within the wetlands.
 - Examples include, but are not limited to, sediment removal, trash and debris removal, retrofit stormwater ponds, adjust control structures and outfalls, adjust flow rates in stormwater conveyance features, installation of plants, and creation of wetland treatment trains.
- The Constantine project team will work with AED to review and prioritize the recommendations to address areas of critical concern.
- The locations of enhancement areas will be provided to AED staff in Esri ArcGIS geodatabase format for review.
- The wetland evaluations and improvement recommendations will be conducted in conjunction with the Southeastern Natural Sciences Academy.

5. Watershed and Stormwater Experience

Constantine Engineering, ZEL Engineers and Cardno ENTRIX have significant joint and individual experience with watershed and stormwater projects. While it is not practical to provide an exhaustive list here, the remainder of this section provides descriptions and client references for select, representative projects.

Project

Surface Water and Biological Monitoring Project

Client

Jeff Littrell – Director
Okaloosa County (FL) Water & Sewer Department
1804 Lewis Turner Blvd
Suite 300
Fort Walton Beach, FL 32547
(850) 651-7171
jlittrell@co.okaloosa.fl.us

Location

Fort Walton Beach, Florida

Project Summary

Requirements contained in the Florida Department of Environmental Protection (FDEP) operating permits for the Arbennie-Pritchett WRF (FLA485942) and the Bob Sikes WRF (FLA010181) require surface water and biological monitoring down-gradient of the effluent disposal site within adjacent or nearby waterways. Quarterly water quality and biennial SCI monitoring are required through the expiration date of the current permits.

Since 2009, the Okaloosa County Water and Sewer Department (OCWS) has retained the team of Constantine Engineering and Cardno ENTRIX to conduct quarterly water quality monitoring events at each of the previously designated surface water sites. Samples are analyzed for pH, specific conductance, temperature, dissolved oxygen, total nitrate-nitrogen, total nitrogen, total phosphorus, ortho-phosphate and stream condition index.

As part of this project, Constantine and Cardno ENTRIX prepare and submit quarterly reports to OCWS and FDEP to ensure permit compliance.



Project

Instream Flow Study, Permitting, and Environmental Assessment for Water Withdrawal

Client

Tom Wiedmeier, P.E. – Director
Augusta Utilities Department
360 Bay Street, Suite 180
Augusta, GA 30901
(706) 312-4132
twiedmeier@augustaga.gov



Location

Augusta, Georgia

Project Summary

ZEL Engineers and Cardno ENTRIX were retained by the City of Augusta to obtain the state and federal permits necessary for expansion of the Raw Water Pumping Station and increased water withdrawals through 2050. ZEL Engineers and Cardno ENTRIX served as the technical, regulatory, and environmental consultants responsible for assisting with the City of Augusta in all aspects of the licensing process. In order to support the license and permit applications, a broad range of technical analyses, water resource assessments, and agency consultation processes were conducted to provide a defensible basis for the proposed expansion and permits.



In close coordination with state agencies in Georgia and South Carolina and with federal agencies, ZEL Engineers and Cardno ENTRIX designed and completed the Savannah River Instream Flow Study. The study was designed to establish the flows needed to maintain and enhance anadromous and resident fish habitat and populations, fish passage and other instream values. The study included

extensive hydrologic analyses, anadromous fish passage evaluations, fisheries biological assessments, and water quality monitoring. Cardno ENTRIX provided strategic planning and technical assistance. Cardno ENTRIX also developed resource reports, negotiated with agencies, and submitted a license application in conjunction with ZEL Engineers on behalf of the City. This study used the Instream Flow Incremental Methodology (IFIM) to produce flow-habitat relations for over 20 warm water fish species in six habitat-use guilds. The study also identified the flow needs associated with recreational boating activities.

The ZEL Engineering/Cardno ENTRIX team's ability to integrate the requirements for protection of multiple resources, with the needs of multiple stakeholders including government regulatory agencies, was vital to successfully meeting the client's needs.

Specific scope of services included:

- Resource Studies and Agency Consultation Documents
- Savannah River Instream Flow Study

- Low-Flow Management Plan and automated Canal Operations Tool
- Fish passage facility design and Implementation Plan
- Agency negotiations on flow regime and license conditions
- Hydrologic and decision-support analysis tools
- Hydrologic, hydraulic, and habitat modeling
- Section 7 Endangered Species Consultation
- Section 106 NHPA Compliance

Project

Allatoona Creek Enhancement Design and Monitoring

Client

Mr. Chuck Youmans
Cobb County
Stormwater Management
100 Cherokee Street
Marietta, Georgia 30090
(770) 419-6438
chuck.youmans@cobbcounty.org

Location

Cobb County, Georgia

Key Services

- Fish population study
- Aquatic habitat assessment
- Geomorphic Monitoring
- Water Quality Monitoring
- Streambank stabilization
- Riparian buffer restoration
- Permitting



Project Summary

A team of Cardno ENTRIX scientists and engineers were awarded a contract to perform stream restoration on 2,200 linear feet of Allatoona Creek in Cobb County Georgia. Cardno ENTRIX performed a fish population study and found 17 species of fish inhabiting the stream including the federally listed Cherokee darter (*Etheostoma scottii*). Our staff also performed a habitat structural assessment and found that large sections of the project reach have good quality existing aquatic habitat.

Based on these studies, Cardno ENTRIX modified the design approach so that preservation of existing habitats is prioritized and only minimal earth moving will occur during construction. The modified design approach includes bank stabilization and planting in areas where the stream is actively eroding, placement of root wad revetments at key locations where banks are vulnerable to erosive forces, improvements to the riparian buffer to provide increased shade, and construction of habitat features at specific locations on the channel bed, downstream of the

high quality habitat. No other locations on the bed of the channel will be impacted during construction. The project owner and regulatory agencies have been very pleased with the change in approach developed by Cardno ENTRIX. All parties agree that taking relatively simplistic measures to improve habitat conditions with minimal disturbance will represent the best path forward to utilize the grant funding. To date, Cardno ENTRIX has been responsible for completing final design, construction documents, and permitting.

Cardno ENTRIX staff also completed pre-construction monitoring to assess stream channel morphology and water quality. A total of six geomorphic monitoring stations were established throughout the project reach to represent riffle, run, and pool habitats. Permanent monuments were established at each site and GPS coordinates were collected. At each location, a detailed cross-section was surveyed using standard methods. Measurements were used to estimate pre-construction erosion loss; they will also be used compare to measurements and calculations one year after construction at the same locations. A water quality station was established on the upstream end of the project as well as the downstream end of the project. One dry-weather and two wet-weather events were captured prior to construction and analyzed for total suspended solids (TSS). Habitat assessments were conducted for the stream reaches upstream and downstream of Mars Hill Road using the Georgia DNR Macroinvertebrate Biological Assessment of Wadeable Streams, Standard Operating Procedures (March 2007).

Project

Gwinnett County Watershed Improvement Plans

Client

Pete Wright, PE
Gwinnett County
Water Resources Department
684 Winder Highway
Lawrenceville, GA 30045
678-376-6948
pete.wright@gwinnettcountry.com

Location

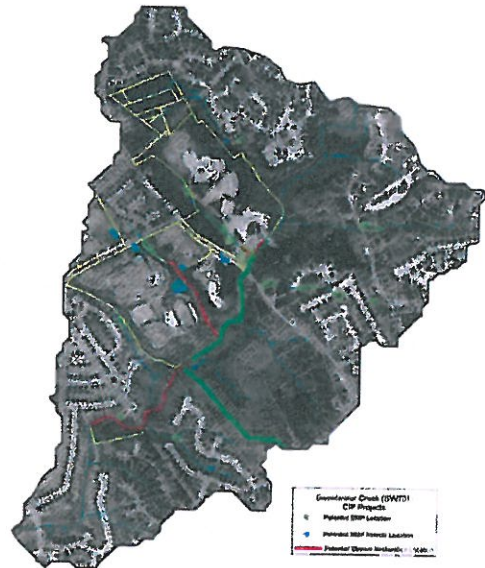
Gwinnett County, Georgia

Key Services

- Watershed Planning
- Urban Stream Assessment
- Watershed Improvement Project Recommendations
- Pollutant Loading Modeling
- Stormwater BMP Evaluations

Project Summary

Cardno ENTRIX has developed seven watershed improvement plans, covering over 200 square miles of Gwinnett County since spring 2002. These plans have been developed for the



5. Watershed and Stormwater Experience

Department of Public Utilities to prioritize watershed capital projects to improve physical, chemical, and biological conditions within each watershed. Watersheds in the County are highly developed, and as a result, the streams are degraded due to non-point source pollution and altered hydrology. Development of the improvement plans included detailed channel stability and habitat assessments of all streams in each watershed to identify and prioritize reaches for stabilization or restoration and identify opportunities for stormwater treatment. In total, Cardno ENTRIX has assessed over 600 miles of streams throughout these watersheds. Implementation of multiple prioritized projects is now underway. Cardno ENTRIX has or is currently designing the following:

- Collins Hill Park Stream Restoration and Stormwater Improvement Project
Project consisted of streambank stabilization design for 350 linear feet and full restoration design of 250 linear feet of stream.
- Riverside Parkway Streambank Stabilization and Stormwater Improvement Project
Project consisted of streambank stabilization design for over 800 linear feet of stream and design of flow diversion structure.
- Collins Hill High School Stream Restoration and Stormwater Improvement Project
Project included restoration design for 1,800 linear feet of stream and design of BMP outfall conveyance into stream.
- Shannon Way Streambank Stabilization and Constructed Wetlands Project
Stabilization of 400 linear feet of streambank and constructed wetland and bioretention cell design for two stormwater outfalls.
- Delaware Court Stream Restoration and Stormwater Improvement Project
Project consisted of streambank stabilization for 500 linear feet of stream and design of engineered swale and bioretention cells for four stormwater outfalls.

Project:

City of Tallahassee Stormwater Monitoring

Client:

Mark Heidecker
City of Tallahassee
Stormwater Management
300 S. Adams Street B-35
Tallahassee, FL 32301
850-891-6825
mark.heidecker@talgov.com

Location:

Alford Arm Drainage Basin, Leon
County, Florida

Key Services:

- Flow-weighted Stormwater Sampling
- Hydrologic Survey



- USGS Discharge Measurement
- Ambient Surface Water Monitoring

Project Summary:

Cardno ENTRIX is working alongside the City of Tallahassee to address growing concern over the health of a series of waterbodies located within Killearn Estates in northern Leon County, Florida. In order to better understand the flux and fate of stormwater pollutants, Cardno ENTRIX has installed and is operating twelve automated ISCO water samplers at representative locations throughout the influencing drainage area. Each sampler is programmed to gather flow-weighted water quality samples during a range of precipitation events. The data collected will be assessed in concert with ambient surface water, physiochemical and hydrodynamic data. The comprehensive monitoring will enable the City and FDEP to make water management decisions based on scientifically sound data.

Project

South Bryan County Watershed Assessment and Protection Plan

Client

Kirk D. Croasmun, PE
Bryan County
Engineering and Inspections
66 Captain Matthew Freeman Drive
Suite: 201
Richmond Hill, GA 31324
912-756-7953
kcroasmun@bryan-county.org



Location

Bryan County, Georgia

Key Services:

- Developing and Implementing a Water Quality Monitoring Plan
- Watershed Characterization
- Biological Sampling
- Water Quality Modeling

Project Summary

Cardno ENTRIX was part of a consultant team assembled to conduct a watershed assessment for a 140 mi² service area in the southern portion of Bryan County, GA, just south of the City of Richmond Hill, GA. The work will ultimately include the development of a stormwater management plan and watershed protection plan. Once in place, the watershed protection plan will aid in preserving and/or protecting the water quality and aquatic habitat found in the South Bryan County watersheds. As a condition of issuance of a National Pollutant Discharge and Elimination System (NPDES) permit, wastewater treatment facilities seeking new or a renewal of their discharge permits will have to have a current watershed assessment and watershed

5. Watershed and Stormwater Experience

protection plan approved by and on file with Georgia Environmental Protection Division (GaEPD). Additionally, the County is required to develop and implement a watershed protection plan which will address nonpoint source pollution within the service area of the wastewater treatment plant.

Cardno ENTRIX's specific roles include (1) developing and implementing a watershed monitoring plan, (2) developing the watershed characterization, (3) conducting biological sampling, and (4) conducting water quality modeling. By the watershed protection plan, Bryan County can put measures in place to protect its water quality while providing a stable environment for a viable economy in the region.

Project

Design Manual of Stormwater Best Management Practices

Client

Jennifer Smith, PE
City of Charlotte
Storm Water Services Division
700 North Tryon Street
Charlotte, North Carolina 28202
704-336-7924
jgsmith@charlottenc.gov

Location

Charlotte, North Carolina

Key Services:

- Develop a Design Manual for Stormwater BMPs



Project Summary

Cardno ENTRIX is the wetland technical specialist which prepared the Best Management Practices Design Manual for the City of Charlotte, Stormwater Services Division. The manual details planting selections, ecological requirements, construction methods and wetland plant performance standards. It is anticipated that the manual will be used by designers and reviewers of stormwater management systems, in which wetland vegetation is an important component of water quality.

The City of Charlotte, Mecklenburg County, and the Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill, and Pineville have adopted post-construction storm water ordinances for the purpose of controlling and managing storm water runoff and associated negative water quality and quantity impacts resulting from post-construction storm water discharges through the use of structural management practices.

The key objectives of the post-construction ordinances are:

5. Watershed and Stormwater Experience

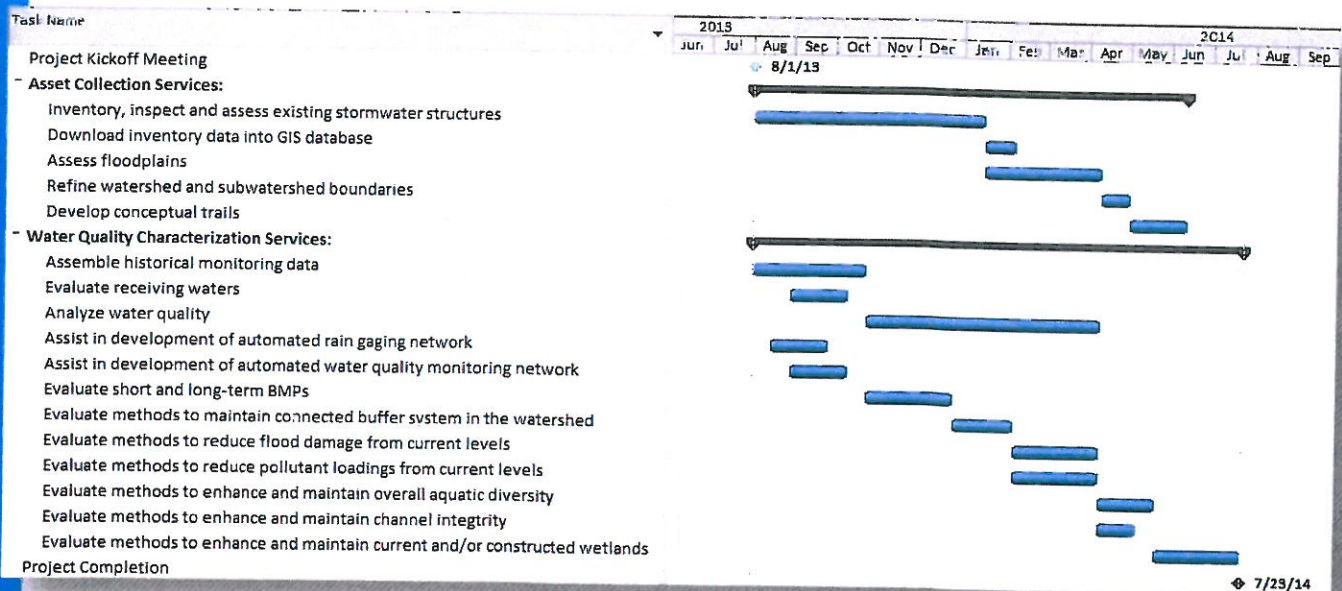
1. Achieve compliance with the Phase I and Phase II NPDES Storm Water Permit requirements for post-construction pollution control, as applied to the respective jurisdictions.
2. Satisfactorily address the guidelines to mitigate the cumulative and secondary impacts to aquatic and terrestrial wildlife resources and water quality specified by the N.C. Wildlife Resources Commission and the U.S. Fish and Wildlife Service for Goose Creek and the Yadkin River Watershed.
3. Satisfactorily address the causes of impairment identified in the N.C. 2002 Integrated 305(b) and 303(d) Report for surface waters in Mecklenburg County when the potential sources of water quality impairment are identified as urban runoff/storm sewers.
4. Satisfactorily address detention measures for the control of storm water volumes and peaks associated with new construction.

The manual was developed to assist in the design and evaluation of storm water management facilities (BMPs) for demonstrating compliance with Phase I and Phase II post-construction storm water ordinances, watershed protection overlay ordinances, rezoning notes, and BMPs required by State 401 Water Quality Certifications. Application of the procedures and criteria presented in this manual will contribute toward the effective and economical management of storm water in the community.

The manual presents technical and engineering procedures and criteria needed to comply with BMP design requirements contained in post-construction storm water ordinances, watershed protection overlay ordinances, rezoning notes, and BMPs required by State 401 Water Quality Certifications in the City of Charlotte, Mecklenburg County and the six Towns. Copies of the applicable regulations are contained in the Administrative Manual.

6. Proposed Schedule

Our project approach is prioritized to meet Augusta's schedule milestones for evaluating the current stormwater GIS model; inventorying, inspecting and assessing the stormwater infrastructure features; evaluating floodplains; collecting water quality data; and recommending Best Management Practices (BMP) and water quality enhancements, all completed within one calendar year from notice-to-proceed (assumed as August 1, 2013 for purpose of presenting schedule).



Augusta, GA Engineering Department

FEE SCHEDULE

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

Date: January 8, 2014				SNSA	
Phase 1: Data Inventory and Assessment					
Task A: Digital Conversion			Unit Price (\$0	Quantity	Cost
A.1	Review of existing images		0	0	0
A.2	Georeference and Rectify AED.		0	0	0
A.3	Add rectified imagery to a database with relevant dr		0	0	0
A.4	Digitize features on rectif				
A.4.1	Digitize all available infor		0	0	0
A.4.2	Digitize only structure typ		0	0	0
Task B: Inventory Closed Pipe and Open Conv					
B.1	Asset Inventory & Assessr				
	B.1.1	Closed St			
	B.1.2	Ditch Stru			
B.2	Management and QA/QC		0	0	0
B.3	Survey Grade Asset Collec				
	B.3.1	Survey G	0	0	0
	B.3.2	Survey G surveying	0	0	0
Task C: Inventory Receiving Streams					
C.1	Stream Walk & Geomorph		550.00	72	\$ 39,600.00
C.2	Document Outfalls		200.00	20	\$ 4,000.00
C.3	FEMA Cross-Section, 4-po		200.00	100	\$ 20,000.00
C.4	Final Report				
Task D: Rain Gage Installation					
D.1	Review Equipment and G		10,000.00	1	\$ 10,000.00
D.2	Install Raingages and Lev		2,840.00	14	\$ 39,760.00
D.3	Monitor Raingages to ens		6,700.00	12	\$ 80,400.00
Task E: Project Coordination Meetings					
E.1	Monthly Status Meeting t				
Phase 2: Modeling Effort					
	To Be Scoped as Funds ar				\$ 193,760.00
Phase 3: Water Quality Monitoring Effort					
	To Be Scoped as Funds ar				

Augusta, GA Engineering Department

ADDENDUM(S)

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**



Procurement Department

Mrs. Geri Sams, Director

MAILED

TO:

All Bidders
Phyllis Mills, Quality Assurance Analyst
Abie Ladson, Augusta Engineering Department

FROM:

Geri Sams *GSams/sp*
Procurement Director

DATE:

May 31, 2013

SUBJ:

Clarifications to the Specifications

RFQ ITEM:

RFQ #13-149 Professional Services to Assess & Analyze
Watersheds, Inventory Stormwater Facilities & Storm Conveyance
for Engineering Department

RFQ DATE: Friday, June 21, 2013 @ 11:00 a.m.

ADDENDUM NO. 1

This Addendum shall form a part of the referenced RFQ Item: 13-149, and any agreement entered into in connection therewith equally as if bound into the original document. Acknowledge receipt of this addendum on the Attachment B form.

Clarifications to Specifications

Stormwater Utility Implementation Plan as noted per RFQ specifications on page 27 of 33. (Attached)

Please acknowledge addendum in your submittal
END ADDENDUM

Attachments: Stormwater Utility Implementation Plan (58 pages)

Room 605 - 530 Greene Street, Augusta Georgia 30901
(706) 821-2422 - Fax (706) 821-2811

www.augustaga.gov

Register at www.demandstar.com/supplier for automatic bid notification

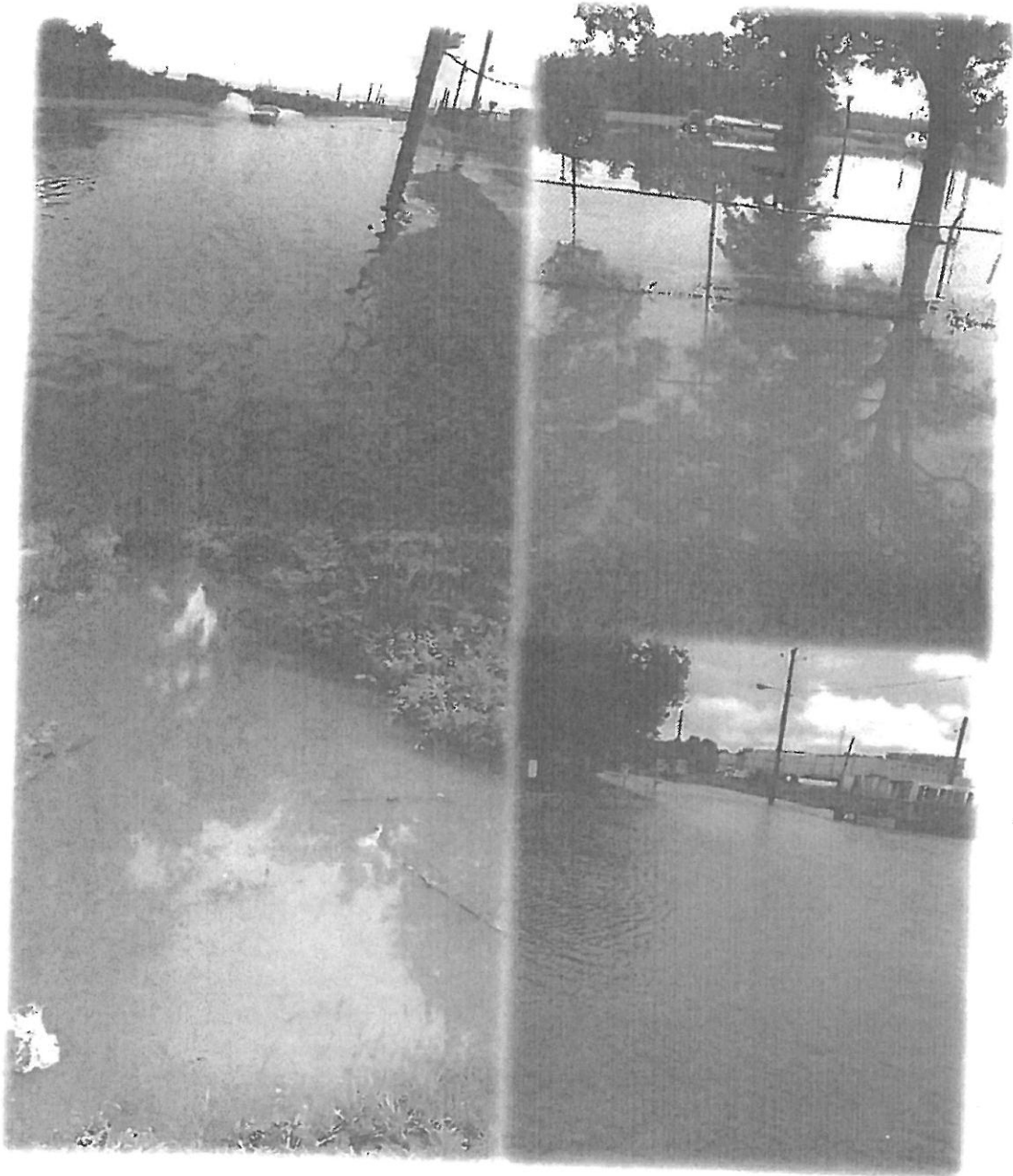


Scan this QR code with your
smartphone or camera equipped
tablet to visit the Augusta, Georgia

Page 1 of 1

Addendum #1 RFQ Item #13-149

STORMWATER UTILITY IMPLEMENTATION PLAN



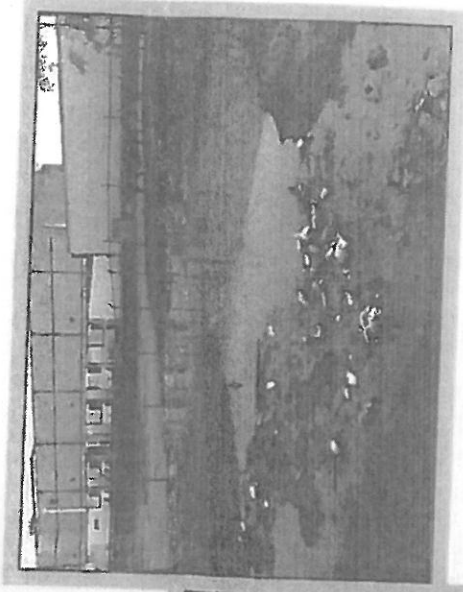
CITY OF AUGUSTA, GA
ENGINEERING DEPARTMENT
AUGUST 2012

TABLE OF CONTENTS

1. PowerPoint Presentation
2. Detailed Schedule
3. Cash Flow Summary
4. Existing and Potential Capital Improvement Projects
5. Required Information for Stormwater Database/GIS

1

CITY OF AUGUSTA, GA



STORMWATER IMPLEMENTATION PLAN

WWW.AUGUSTA.GA.GOV

Augusta
GEORGIA

PRESENTATION CONTENTS

- INTRODUCTION/BACKGROUND
 - PROBLEM STATEMENT
- STORMWATER IMPLEMENTATION TEAM
- ESTIMATED REVENUES AND EXPENDITURES
 - PROGRAM GOALS AND OBJECTIVE
- OVERALL IMPLEMENTATION SCHEDULE

INTRODUCTION/BACKGROUND

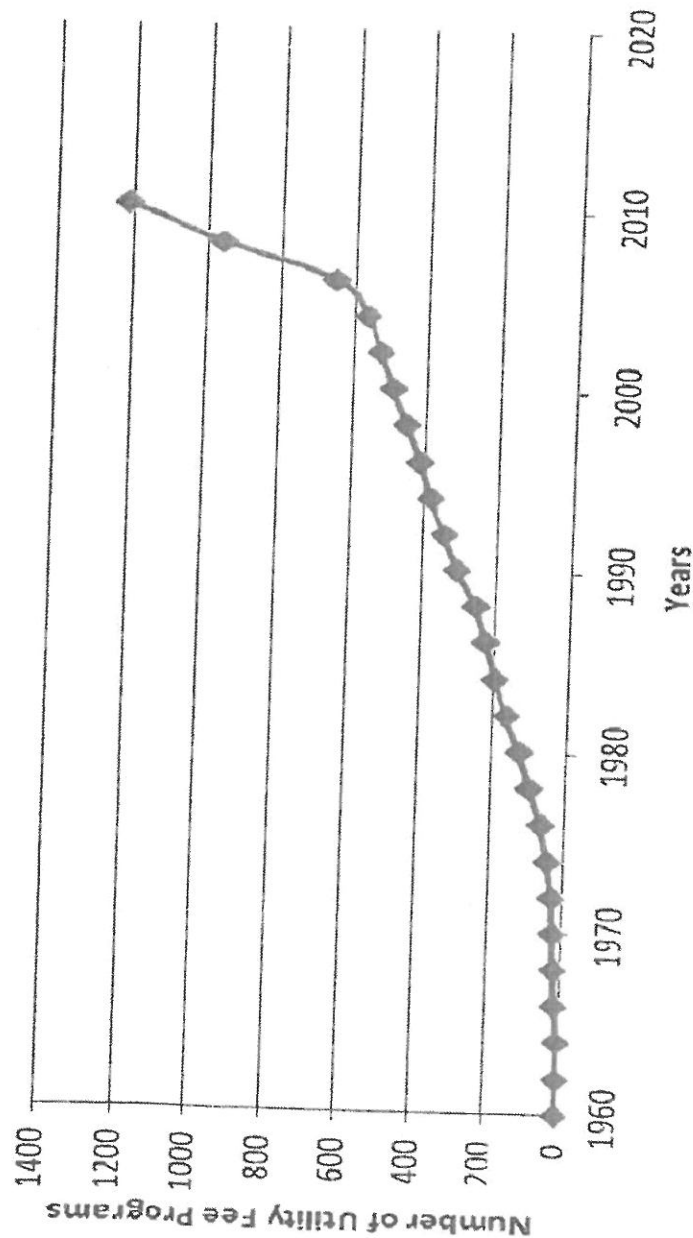
WWW.AUGUSTAGOV

Augusta
GEORGIA

INTRODUCTION/BACKGROUND

- A stormwater utility is a program that collects fees related to the control and treatment of stormwater.
- Stormwater management is a state and federally-mandated program that requires the City to regulate and monitor stormwater in an effort to reduce pollution. However, federal or state governments do not provide funding.
- Revenues needed to support this mandated program are provided through a Stormwater Utility.
- Property owners are billed a flat rate based on the amount of impervious area (areas covered by concrete, asphalt, residences, buildings, etc.).
- Includes single family homes, mobile homes, multi-family dwellings, condominiums, industry and commercial, and governmental properties. The formula for determining non-residential property fees is as follows: An Equivalent Residential Unit (ERU) is equal to the average impervious area determined from all residential units in the City.

Number of Stormwater Utility Fee Programs Created Over Time in the United States



SURROUNDING MUNICIPALITIES THAT HAVE IMPLEMENTED A
STORMWATER UTILITY FEE PROGRAM

- Columbia County, GA
- City of North Augusta, SC
 - Aiken County, SC
 - City of Griffin, GA
 - City of Covington, GA
 - City of Conyers, GA
 - City of Decatur, GA
- Douglasville-Douglas County, GA
 - DeKalb County, GA
 - City of Fayetteville, GA
 - Gilmer County, GA
 - City of Smyrna, GA

PROBLEM STATEMENT

WWW.AUGUSTA.GOV



MAJOR REASONS FOR THE CITY OF AUGUSTA, GA TO IMPLEMENT A STORMWATER UTILITY PROGRAM

- Funding to help comply with the current State and Federal regulations and guidelines (e.g., Detection of illicit connections to storm sewers).
- Improve maintenance of countywide easements and right-of-ways, pipe systems, culverts/bridges, detention/retention ponds, levee, curb and gutter, and lakes/ponds.
- Replace or improve the aged stormwater infrastructure.
- Implement Watershed Master Plan for both short and long-term planning purposes.
- Improve efficiency of customer services as it relates to stormwater.

Augusta
GEORGIA

WWW.AUGUSTA.GOV



Augusta
GEORGIA

WWW.AUGUSTAGA.GOV





WWW.AUGUSTAGA.GOV

Augusta
GEORGIA

Augusta
GEORGIA

WWW.AUGUSTA.GOV



STORMWATER IMPLEMENTATION TEAM

WWW.AUGUSTAGA.GOV

Augusta
GEORGIA

CITY OF AUGUSTA, GA STORMWATER TEAM

PROPOSED IN-HOUSE TEAM

- Commissioners and Administration
 - Engineering Department
- Information Technology Department
- Planning and Development Department
 - Utilities Department
- Environmental Services Department
- Parks, Recreation, and Facilities Department
 - Finance Department
 - Law Department

CITY OF AUGUSTA, GA STORMWATER TEAM

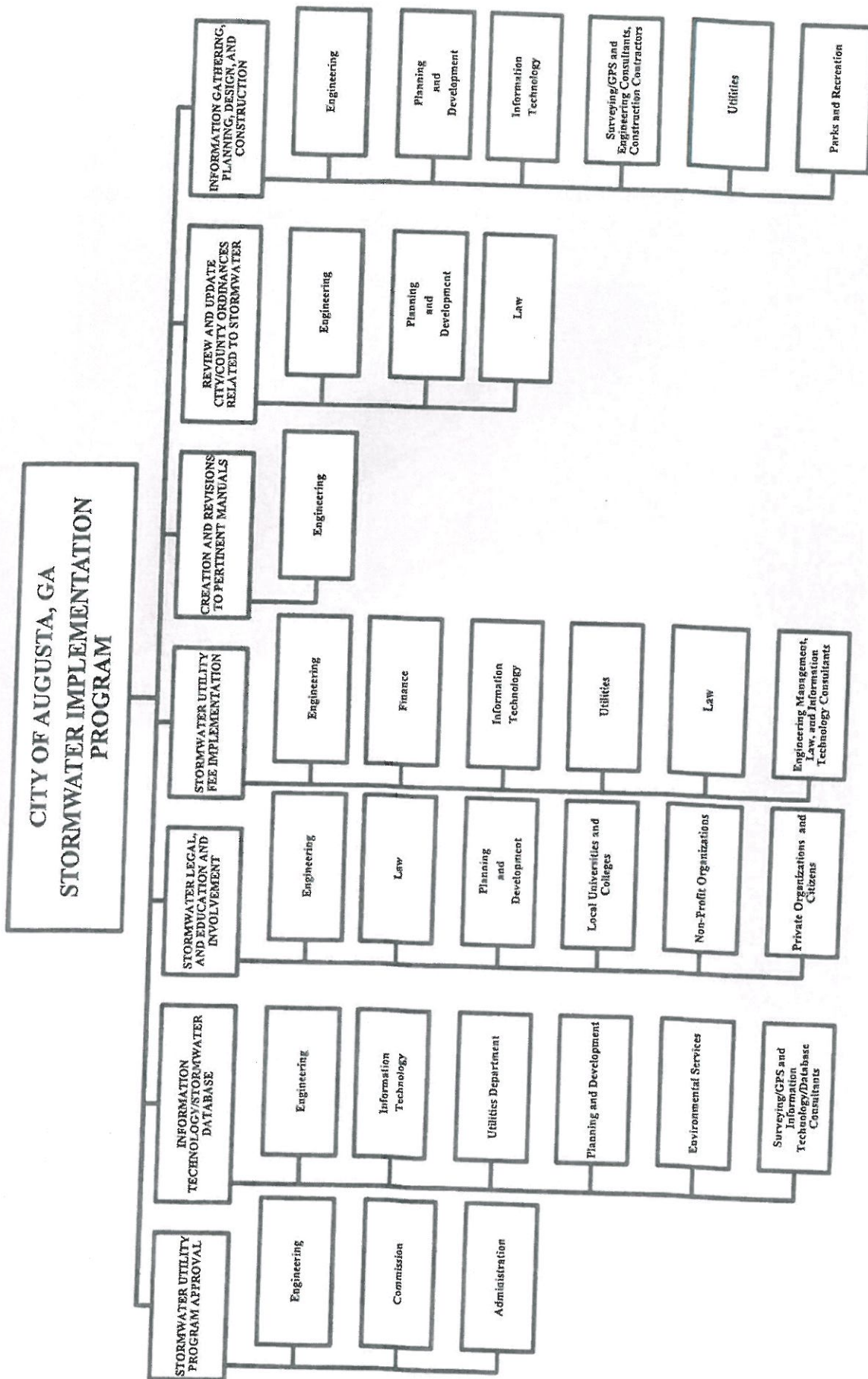
POSSIBLE OUTSIDE ORGANIZATIONAL TEAM

- Southeastern Natural Sciences Academy
 - Richmond County Citizens
 - Private Businesses
 - Augusta State University
 - Paine College
 - Augusta Technical College
 - Augusta Neighborhood Alliance Association
 - River Keepers
 - Richmond County Board of Education
 - Neighborhood Associations

CITY OF AUGUSTA, GA STORMWATER TEAM

REQUIRED CONSULTANTS/CONTRACTORS TEAM

- Engineering Management Consultant (Experience and success with Stormwater Implementation)
- Law/Legal Consultant (Experience and success with Stormwater Implementation)
- Public Relations Consultant (Experience and success with Stormwater Implementation)
 - Surveying/GPS Consultant(s)
- Engineering Consultants (9) (Watershed Assessment and Analysis)
 - Information Technology/Database Consultant
- Construction Contractors



ESTIMATED COST SUMMARY

5-YEAR ESTIMATED PROGRAM REVENUE	COST
Allocated Funds for Program Implementation (SPLOST VI):	\$3,500,000
Estimated Utility Fees:	\$42,903,900
SPLOST VI (Salaries):	\$7,055,831
SPLOST VI (Capital Improvement Projects):	\$27,375,000
SPLOST VI (Operation and Preventative Maintenance):	\$0
Estimated NPDES Fees:	\$308,000

TOTAL: \$81,142,731

5-YEAR ESTIMATED PROGRAM EXPENDITURE	COST
Program Supervision and Development:	\$17,503,826
NPDES Compliance:	\$1,211,000
Engineering:	\$6,905,000
Enforcements:	\$155,000
Operation and Preventative Maintenance:	\$25,590,000
Drainage Related Capital Improvement Projects:	\$65,430,000
Equipment:	\$3,300,000
Material Purchase (Annually):	\$600,000

TOTAL: \$120,694,826

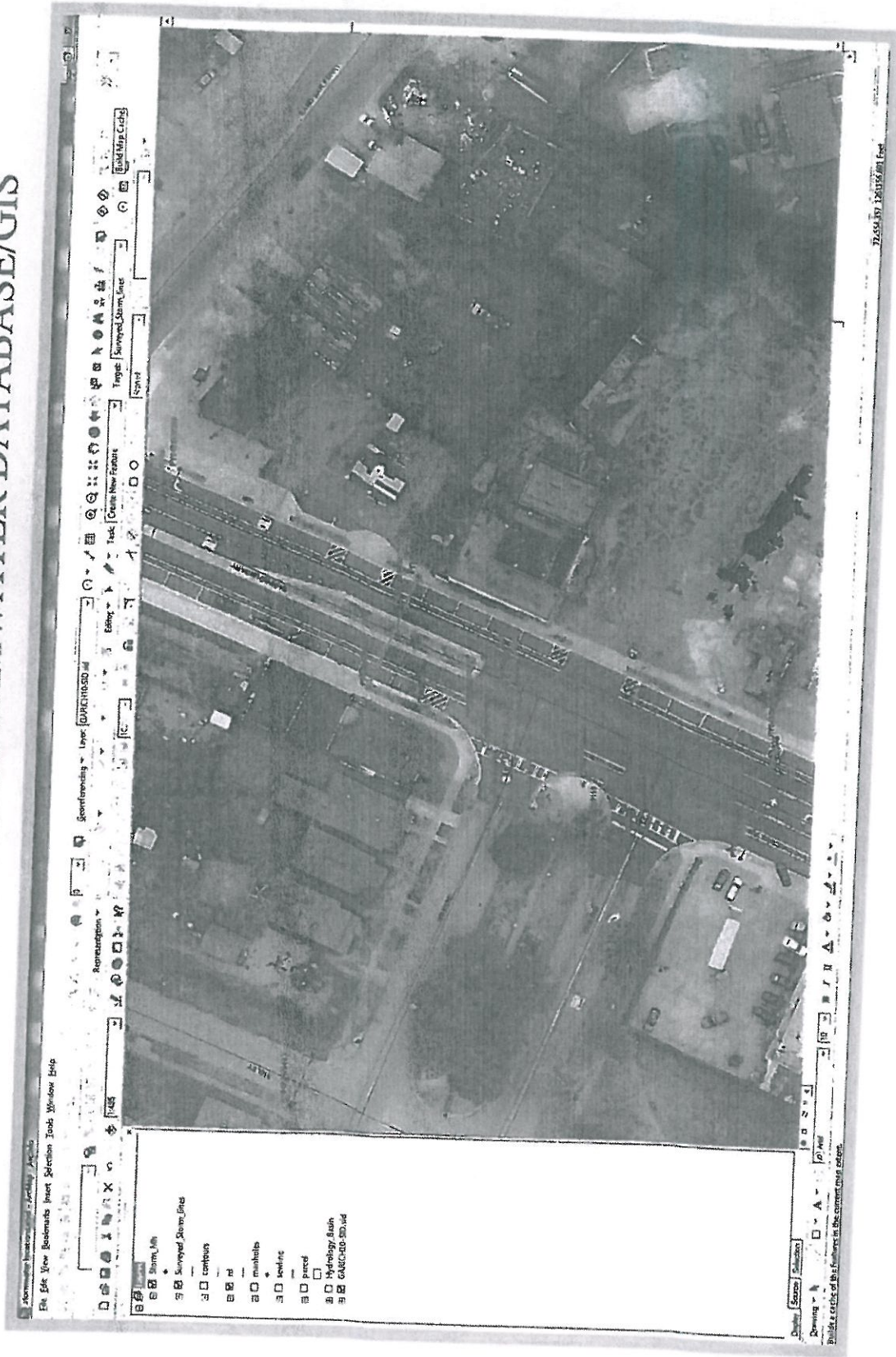
NOTE: An estimated SPLOST 7 is not included in the 5-Year Estimated Program Revenue

PROGRAM GOALS AND OBJECTIVE

WWW.AUGUSTAGA.GOV

Augusta
GEORGIA

COMPREHENSIVE STORMWATER DATABASE/GIS



WWW.AUGUSTAGA.GOV

Augusta
GEORGIA

COMPREHENSIVE STORMWATER DATABASE/GIS

Selected Attributes of Storm Lines														
FID	Shape	Id	Basin	Tax_Bloc	MH_Jmbr	Type	Type_Mh	Top_elev	Inv_elev	Date_svy	Easting	Northing	Date_frs	Surveyor
91	Point	0	Phinzy Swamp	46	PY0480W0349	DN	Double Yling Tr	131.135	124.98	12.00.00 AM	722855	1281400	12/1/2010	RS
92	Point	0	Phinzy Swamp	46	PY0480W0350	DN	Manhole	131.356	121.49	12.00.00 AM	722864	1281410	12/1/2010	RS
93	Point	0	Phinzy Swamp	48	PY0480W0443	JB	Junction Box	132.325	125.55	12.00.00 AM	722814	1281430	12/1/2010	RS
94	Point	0	Phinzy Swamp	48	PY0480W0441	HB	Head Back Trap	131.263	124.84	12.00.00 AM	722802	1281390	12/1/2010	RS
482	Point	0	Phinzy Swamp	45	PY0480W0497	GT	GRATE TRAP	132.23	131.08	12.00.00 AM	722819	1281350	7/1/1980	0
485	Point	0	Phinzy Swamp	45	PY0480W0500	WT	WEDGE TRAP	132.85001	132.25999	12.00.00 AM	722885	1281370	7/1/1980	0

Selected Attributes of Surveyed Storm Lines														
FID	Shape	Id	Basin	UPMH	UPMH	UPMH	Up Elev	DN Elev	Pipe	Trench	Pipe Dia	Length	Of	Contractor
20	Polyline	0	Phinzy Swamp	PY0480W0355	PY0480W0450	PY0480W0450	122.93	122.73	RCP		18	164	EastBoundary-03 pg	WR Gore
21	Polyline	0	Phinzy Swamp	PY0480W0450	PY0480W0450	PY0480W0450	121.49	120.49	Pipe		18	257	EastBoundary-03 pg	WR Gore
374	Polyline	0	Phinzy Swamp	PY0480W0500	PY0480W0494	PY0480W0494	132.25999	131.55	VC		10	21	07603000	BALDWIN & CRANSTO
376	Polyline	0	Phinzy Swamp	PY0480W0497	PY0480W0494	PY0480W0494	131.08	124.88	Pipe		8	10	07603000	BALDWIN & CRANSTO
535	Polyline	0	Phinzy Swamp	PY0480W0441	PY0480W0443	PY0480W0443	124.88	124.88	Pipe		15	39	EastBoundary-03 pg	WR Gore
536	Polyline	0	Phinzy Swamp	PY0480W0443	PY0480W0450	PY0480W0450	125.55	122.77	Pipe		18	55	EastBoundary-03 pg	WR Gore
537	Polyline	0	Phinzy Swamp	PY0480W0349	PY0480W0450	PY0480W0450	124.98	124.98	Pipe		18	22	EastBoundary-03 pg	WR Gore

COMPREHENSIVE STORMWATER DATABASE/GIS

☒ Selected Attributes of Storm_Mn

FTID	Shape *	Id	Basin	Text_Bloc	MH_Lmbr	Type	Type_Lmbr	Top_elev	Inv_elev	Date_svy	Easting	Northing	Date_ins	Surveyor	A_inv_el
91	Point	0	Philly Swamp	48	PY048W0349	DW	Double Wing Tr	131.130	124.98	12/00/00 AM	722885	1261400	12/1/2010	RS	0
92	Point	0	Philly Swamp	49	PY048W0450	MH	Manhole	131.356	121.48	12/00/00 AM	722864	1261410	12/1/2010	RS	0
93	Point	0	Philly Swamp	48	PY048W0443	JB	Junction Box	132.325	125.55	12/00/00 AM	722614	1261430	12/1/2010	RS	0
94	Point	0	Philly Swamp	48	PY048W0441	HB	Hood Back Trap	131.263	124.06	12/00/00 AM	722602	1261390	12/1/2010	RS	0
482	Point	0	Philly Swamp	48	PY048W0497	G7	GRATE TRAP	132.231	131.09	12/00/00 AM	722819	1261350	7/1/1980	0	0
495	Point	0	Philly Swamp	48	PY048W0500	WT	WEDGE TRAP	132.85001	132.2599	12/00/00 AM	722595	1261370	7/1/1980	0	0

Records: 14 | 0 | 1 | 1 | Show: All | Selected | Records (6 out of 1294 Selected) | Options

☒ Selected Attributes of Surveyed Storm_Lines

FTID	Shape *	Id	Basin	UFMH	DMH	UP_Elev	Dr_Elev	Pipe_Trenc	Pipe_Diams	Length_of	Scanned_Lm	Engineer_in	Contractor
20	Polyline	0	Philly Swamp	PY048W0355	PY048W0450	122.83	122.73	RCP	18	164	EastBoundary-02.jpg	WR Gore	
21	Polyline	0	Philly Swamp	PY048W0450	PY048W0450	121.49	120.49	Pipe	18	257	EastBoundary-03.jpg	WR Gore	
374	Polyline	0	Philly Swamp	PY048W0500	PY048W0498	131.55	131.55	VC	10	21	07603000	BALDWIN & CRANSTO	
376	Polyline	0	Philly Swamp	PY048W0497	PY048W0498	131.09	124.86	Pipe	8	10	07603000	BALDWIN & CRANSTO	
535	Polyline	0	Philly Swamp	PY048W0441	PY048W0443	124.86	124.86	Pipe	15	39	EastBoundary-03.jpg	WR Gore	
536	Polyline	0	Philly Swamp	PY048W0443	PY048W0450	125.55	122.77	Pipe	18	55	EastBoundary-03.jpg	WR Gore	
537	Polyline	0	Philly Swamp	PY048W0349	PY048W0450	124.86	124.86	Pipe	18	22	EastBoundary-03.jpg	WR Gore	

Record: 14 | 0 | 1 | 1 | Show: All | Selected | Records (7 out of 1187 Selected) | Options

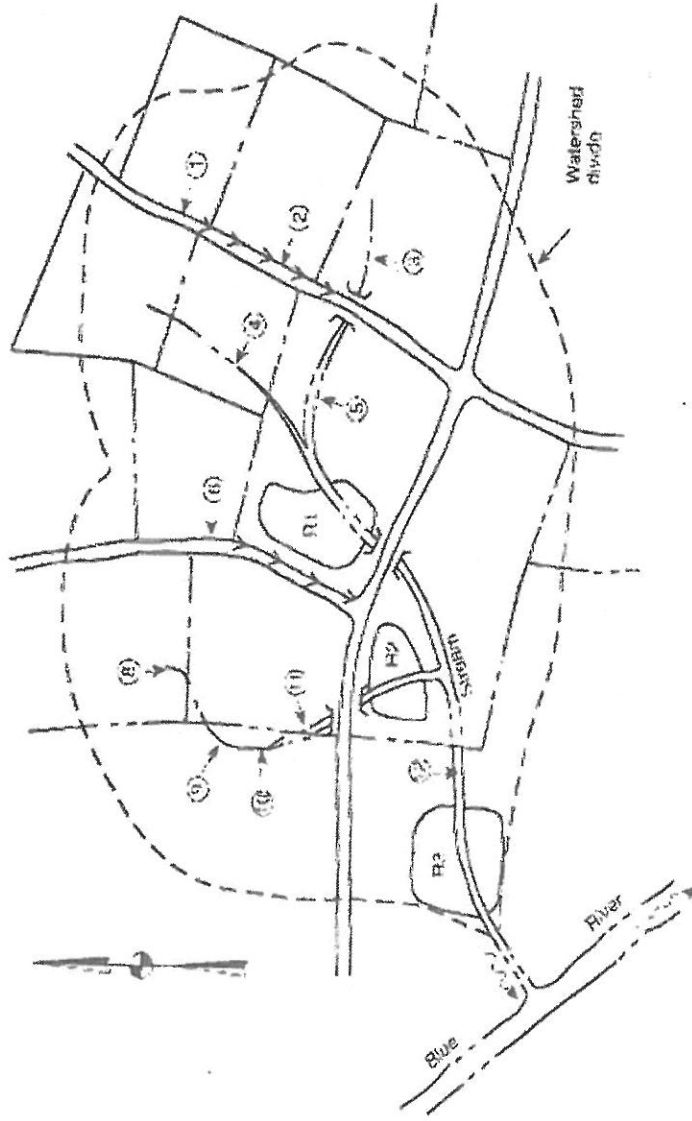
IMPLEMENTATION OF WATERSHED BASED SHORT/LONG TERM PLANS



WWW.AUGUSTA.GA.GOV

Augusta
GEORGIA

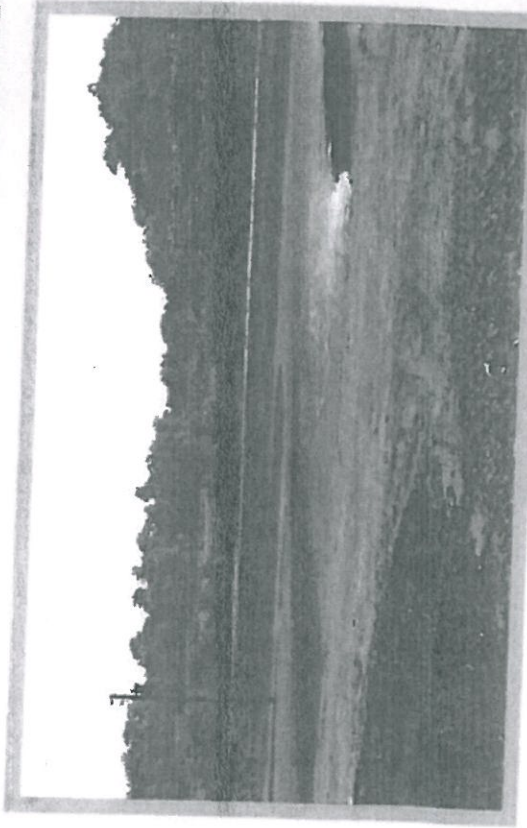
ON-SITE DETENTION PONDS ELIMINATION PROGRAM



On site detention basins versus regional facilities.

Reference: Introduction to Hydraulics and Hydrology with Applications for Stormwater Management

PROPOSED CONSTRUCTION PROJECTS



County-wide Lake/Pond Dredging
and Best Management Practices
(BMP) Implementation



WWW.AUGUSTAGA.GOV

Augusta
GEORGIA

PROPOSED CONSTRUCTION PROJECTS

Roadway / Drainage Capital Improvement Projects



WWW.AUGUSTAGA.GOV

Augusta
GEORGIA

DRAINAGE RELATED CONSTRUCTION PROJECTS

Drainage Capital Improvement Projects



WWW.AUGUSTA.GOV

Augusta
GEORGIA

DRAINAGE RELATED MAINTENANCE REPAIRS



WWW.AUGUSTAGA.GOV

Augusta
GEORGIA

INCREASE MAINTENANCE OPERATIONS

INFRASTRUCTURE MAINTENANCE		DESCRIPTION	KNOWN INVENTORY	NUMBER INSPECTED (Per Year)	NUMBER MAINTAINED (Per Year)
		Catch Basins	12,488 each	3,600 each	905 each
		Ditches	731 miles	900 miles	900 miles
		Detention Ponds	938 each	169 each	228 each
		Storm Drain Pipes	566 miles	268 miles	268 miles
		Street Swept	802 miles	N/A miles	2,165 miles

OVERALL IMPLEMENTATION SCHEDULE

WWW.AUGUSTA.GOV

Augusta
GEORGIA

OVERALL PROJECT SCHEDULE

NO.	ACTIVITY STAGE	DURATION	START DATE	FINISH DATE	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	STORMWATER UTILITY PROGRAM APPROVAL STAGE	131 days	3/20/2012	9/18/2012														
2	INFORMATION TECHNOLOGY/STORMWATER DATABASE STAGE	570 days	9/19/2012	11/25/2014														
3	STORMWATER LEGAL, AND EDUCATION AND INVOLVEMENT STAGE	288 days	9/19/2012	10/25/2013														
4	STORMWATER UTILITY FEE IMPLEMENTATION STAGE	223 days	12/21/2012	10/29/2013														
5	CREATION AND REVISIONS TO PERTINENT MANUALS STAGE	462 days	4/17/2012	1/22/2014														
6	REVIEW AND UPDATE CITY/COUNTY ORDINANCES RELATED TO STORMWATER STAGE	336 days	4/12/2012	7/25/2013														
7	INFORMATION GATHERING, PLANNING, DESIGN, AND CONSTRUCTION STAGE	3537 days	9/19/2012	4/9/2026														
8	IMPLEMENTATION AND PROJECTS COMPLETED	1 day	4/10/2026	4/10/2026														

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

1	STORMWATER UTILITY PROGRAM APPROVAL STAGE		3/20/12	9/18/12	
2	Create Stormwater Concept Plan		3/20/12	4/9/12	Engineering
3	Determine Program Problems, Needs, and Goals		4/10/12	4/16/12	Engineering
4	Disseminate Concept Plan to Staff for Review		4/10/12	4/10/12	Engineering
5	Conduct Concept Stormwater Plan Meeting		4/11/12	4/11/12	Engineering, Planning, IT, Utilities, Law, Environmental, & Fire, Finance
6	Cost of Service Analysis		4/12/12	4/18/12	Engineering
7	Revise Concept Stormwater Plan		4/12/12	4/18/12	Engineering
8	Present Stormwater Utility Fee Program to Commissioners for Approval		9/18/12	9/18/12	Engineering
9	INFORMATION TECHNOLOGY/STORMWATER DATABASE STAGE		9/19/12	11/25/14	
10	Evaluate Possible Overlapping of Database		9/19/12	1/22/13	IT, Engineering, Utilities
11	Create a Uniform Database (GIS, Stormwater, Sanitary Sewer, GBA, etc.)		1/23/13	4/15/14	IT, Engineering, Utilities
12	Evaluate & Revise Necessary Database Policy		4/16/14	9/2/14	IT
13	Stormwater Database/GIS Implementation		9/3/14	11/25/14	IT
14	STORMWATER LEGAL, AND EDUCATION AND INVOLVEMENT STAGE		9/19/12	10/25/13	
15	RFP - Engineering, Legal & Public Relations Consultant(s) Stormwater Fee Program		9/19/12	10/30/12	Engineering, Law, Planning
16	Select Consultant for Engineering, Legal, & Public Relations (Stormwater Fee Program)		10/31/12	12/11/12	Engineering, Law, Planning
17	Commission Approval of RFP-Engineering, Legal, & Public Relations (Stormwater Fee Program)		12/12/12	12/13/12	Engineering
18	NTP - Consultant for Engineering, Legal, & Public Relations (Stormwater Fee Program)		12/14/12	12/20/12	Engineering
19	Community Assessment		12/21/12	1/10/13	Engineering, Planning, Consultants, Others
20	Develop & Implement a Public Involvement Strategy		1/11/13	1/31/13	Engineering, Planning, Consultants, Others
21	Develop & Implement Stakeholder Participation		1/11/13	2/6/13	Engineering, Planning, Consultants, Others
22	Conduct Meetings and Presentations		2/7/13	10/25/13	Engineering, Planning, Consultants, Others
23	Disseminate Newsletters, fact Sheets, and Brochures		2/7/13	10/25/13	Engineering, Planning, Consultants, Others
24	Conduct Media Campaigns		2/7/13	10/25/13	Engineering, Planning, Consultants, Others
25	Coordination with Neighborhood and Community Groups for Program Support		2/7/13	10/25/13	Engineering, Planning, Consultants, Others
26	STORMWATER UTILITY FEE IMPLEMENTATION STAGE		12/21/12	10/29/13	
27	Create Funding Policy		12/21/12	1/10/13	Engineering, Finance, Consultants
28	Determine the Detailed Legality of a Financing Mechanism		1/11/13	2/21/13	Engineering, Finance, Consultants
29	Perform Rate Study Analysis and Cash Flow Analysis		2/22/13	4/4/13	Engineering, Finance, Consultants
30	Develop a Short and Long-term Business Plan for the Proposed Stormwater Program		4/5/13	4/25/13	Engineering, Finance, Consultants
31	Create a Stormwater Fee Ordinance		4/26/13	5/16/13	Engineering, Finance, Consultants
32	Develop a Stormwater Master Account System		5/17/13	6/13/13	Engineering, IT, Finance, Consultants
33	Commission Approval of Stormwater Ordinance		5/17/13	5/17/13	Engineering
34	Develop Stormwater Billing System		6/14/13	8/15/13	Engineering, IT, Finance, Consultants
35	Implement Pilot Billing System		8/16/13	9/27/13	Engineering, IT, Finance, Consultants
36	Make Billing System Adjustments		9/30/13	10/28/13	Engineering, IT, Finance, Consultants
37	Billing System Live On-Line		10/29/13	10/29/13	Engineering, IT, Finance, Consultants
38	CREATION AND REVISIONS TO PERTINENT MANUALS STAGE		4/17/12	1/22/14	
39	Draft a Stormwater Design, Construction, and Operation and Maintenance Manual		4/17/12	1/21/13	Engineering
40	Staff to review Draft Design, Construction, and Operation and Maintenance Manual		1/22/13	2/18/13	Engineering
41	Finalize Draft Design, Construction, and Operation and Maintenance Manual		2/19/13	3/18/13	Engineering
42	Commission Approval of Design, Construction, and Operation and Maintenance Manual		3/19/13	3/19/13	Engineering
43	Review current Design and Construction Manual (Roadway, Streets, and Bridges)		3/20/13	12/24/13	Engineering
44	Revise and make necessary changes to the Design and Construction Manual (Roadway, Streets, and Bridges)		12/25/13	1/21/14	Engineering
45	Commission Approval of Design and Construction Manual (Roadway, Streets, and Bridges)		1/22/14	1/22/14	Engineering
46	REVIEW AND UPDATE CITY/COUNTY ORDINANCES RELATED TO STORMWATER STAGE		4/12/12	7/25/13	

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

47	Review Zoning Ordinance		4/12/12	7/4/12	Engineering, Planning
48	Revise Zoning Ordinance		7/5/12	7/25/12	Engineering, Planning
49	Commission Approval of Revised Zoning Ordinance		7/26/12	7/26/12	Engineering, Planning
50	Review Erosion and Sediment Control Ordinance		7/27/12	9/6/12	Engineering
51	Revise Erosion and Sediment Control Ordinance		9/7/12	9/27/12	Engineering
52	Commission Approval of Revise Erosion and Sediment Control Ordinance		9/28/12	9/28/12	Engineering
53	Review Grading Ordinance		10/1/12	11/9/12	Engineering, Planning
54	Revise Grading Ordinance		11/12/12	11/30/12	Engineering, Planning
55	Commission Approval of Revise Grading Ordinance		12/3/12	12/3/12	Engineering
56	Review Stormwater Ordinance		12/4/12	1/14/13	Engineering
57	Revise Stormwater Ordinance		1/15/13	2/4/13	Engineering
58	Commission Approval of Revise Stormwater Ordinance		2/5/13	2/5/13	Engineering
59	Review Tree Protection/Landscaping Ordinance		2/6/13	4/30/13	Engineering, Parks & Recreation
60	Revise Tree Protection/Landscaping Ordinance		5/1/13	5/21/13	Engineering, Parks & Recreation
61	Commission Approval of Revise Tree Protection/Landscaping Ordinance		5/22/13	5/22/13	Engineering
62	Review Subdivision Design and Construction Codes		5/23/13	7/3/13	Engineering
63	Revise Subdivision Design and Construction Codes		7/4/13	7/24/13	Engineering
64	Commission Approval of Revise Subdivision Design and Construction Codes		7/25/13	7/25/13	Engineering
65	INFORMATION GATHERING, PLANNING, DESIGN, AND CONSTRUCTION STAGE		9/19/12	4/9/26	
66	RIP - Stormwater Inventory		9/19/12	10/30/12	Engineering
67	Select Consultant for Stormwater Inventory		10/31/12	11/27/12	Engineering, IT
68	NTP - Stormwater Inventory Consultants		11/28/12	11/28/12	Engineering

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

Phase I - Rad's Creek Watershed			
69	Inventory and Inspect Existing Stormwater Structures	11/29/12	10/2/18
70	Assemble Historical Monitoring Data	11/29/12	9/4/13
71	Download Inventory Data into GIS and Database	9/5/13	10/16/13
72	Develop a Rain-Gage Grid System	9/5/13	1/22/14
73	RFP - Watershed Assessment & Analysis	10/17/13	1/8/14
74	Select Consultant(s) for Watershed Assessment & Analysis	1/23/14	4/16/14
75	Commission Approval of Consultant (Watershed Assessment & Analysis)	4/17/14	4/30/14
76	NTP - Watershed Assessment & Analysis	5/1/14	5/20/14
77	Evaluate Receiving Waters	5/21/14	5/21/14
78	Floodplain Management Assessment	5/22/14	7/23/14
79	Review City/County Master Plan(s)	5/22/14	7/23/14
80	Determine Estimated Population/Growth/Change	5/22/14	7/23/14
81	Estimate Existing Land Use	7/24/14	9/24/14
82	Estimate Existing Impervious Cover (Percentage)	7/24/14	10/27/14
83	Evaluate Existing Land Use Codes & Zoning	7/24/14	9/24/14
84	Revised & Establish New Land Use Codes	10/27/14	12/29/14
85	Link Watershed/Stormwater and Land Use Together	7/24/14	9/24/14
86	Redefine Watershed & Subwatershed Boundaries	12/29/14	2/9/15
87	Build-Out Analysis (Full Development of Zoning)	12/29/14	2/9/15
88	Estimate Existing and Future Impervious Cover	2/9/15	3/23/15
89	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)	3/23/15	9/7/15
90	Analyze Water Quality	9/7/15	1/11/16
91	Implement Short and Long-term BMPs in Strategic Areas	1/11/16	4/4/16
92	Methods to Maintaining a Connected Buffer System in the Watershed	4/4/16	6/6/16
93	Methods to Reduce Flood Damage from Current Levels	4/4/16	5/16/16
94	Methods to Reduce Pollutant from Current Levels	4/4/16	5/16/16
95	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed	4/4/16	5/16/16
96	Methods to Enhance & Maintain Channel Integrity in the Watershed	4/4/16	5/16/16
97	Methods to Limit the amount of Development in the Flood Plan	4/4/16	5/16/16
98	Develop Trail Systems for Walking, Biking, and Jogging	4/4/16	5/16/16
99	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands	6/6/16	8/29/16
100	Identify Major Drainage Projects for Design & Construction (Phase I Projects)	6/6/16	7/18/16
101	RFPs for Major Drainage Projects (Design) - (Phase I Projects)	8/29/16	9/19/16
102	Start Acquiring Property for Stormwater Facilities	9/19/16	12/12/16
103	Select Design Consultants for Major Drainage Projects (Design) - (Phase I Projects)	9/19/16	9/4/17
104	Commission Approval of Consultants (Drainage Projects)	12/12/16	1/2/17
105	NTP - Design Major Drainage Projects (Phase - I)	1/2/17	1/3/17
106	Bid Major Drainage Projects (Phase - I)	1/3/17	7/18/17
107	Construct Major Drainage Projects (Phase - I)	9/4/17	9/5/17
108		9/5/17	10/2/18

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

109	Phase II - Rocky Creek Watershed	9/5/13	6/27/19	
110	Inventory and Inspect Existing Stormwater Structures	9/5/13	6/11/14	Engineering, Consultant
111	Assemble Historical Monitoring Data	10/17/13	11/27/13	Engineering, Consultant
112	Download Inventory Data into GIS and Database	6/12/14	10/29/14	Engineering, Consultant
113	Develop a Rain-Gage Grid System	11/28/13	2/16/14	Engineering
114	RFP - Watershed Assessment & Analysis	10/30/14	1/21/15	Engineering
115	Select Consultant(s) for Watershed Assessment & Analysis	1/22/15	2/4/15	Engineering
116	Commission Approval of Consultant (Watershed Assessment & Analysis)	2/5/15	2/24/15	Engineering
117	NTP - Watershed Assessment & Analysis	2/25/15	2/25/15	Engineering
118	Evaluate Receiving Waters	2/26/15	4/29/15	Engineering, Consultant
119	Floodplain Management Assessment	2/26/15	4/29/15	Engineering, Planning, Consultants
120	Review City/County Master Plan(s)	2/26/15	4/29/15	Engineering, Planning, Consultants
121	Determine Estimated Population/Growth/Change	2/26/15	4/29/15	Engineering, Planning, Consultants
122	Estimate Existing Land Use	4/30/15	7/1/15	Engineering, Planning, Consultants
123	Estimate Existing Impervious Cover (Percentage)	4/30/15	7/1/15	Engineering, Planning, Consultants
124	Evaluate Existing Land Use Codes & Zoning	4/30/15	7/1/15	Engineering, Planning, Consultants
125	Revised & Establish New Land Use Codes	7/2/15	9/2/15	Engineering, Planning, Consultants
126	Link Watershed/Stormwater and Land Use Together	4/30/15	7/1/15	Engineering, Planning, Consultants
127	Redefine Watershed & Subwatershed Boundaries	9/3/15	10/14/15	Engineering, Planning, Consultants
128	Build Out Analysis (Full Development of Zoning)	9/3/15	10/14/15	Engineering, Planning, Consultants
129	Estimate Existing and Future Impervious Cover	10/15/15	11/25/15	Engineering, Planning, Consultants
130	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)	11/26/15	5/11/16	Engineering, Consultant
131	Analyze Water Quality	5/12/16	9/14/16	Engineering, Consultant
132	Implement Short and Long-term BMPs in Strategic Areas	9/15/16	12/7/16	Engineering, Natural Science Academy, Consultants, Others
133	Methods to Maintaining a Connected Buffer System in the Watershed	12/8/16	2/8/17	Engineering, Natural Science Academy, Consultants, Others
134	Methods to Reduce Flood Damage from Current Levels	12/8/16	1/18/17	Engineering, Natural Science Academy, Consultants, Others
135	Methods to Reduce Pollutant from Current Levels	12/8/16	1/18/17	Engineering, Natural Science Academy, Consultants, Others
136	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed	12/8/16	1/18/17	Engineering, Natural Science Academy, Consultants, Others
137	Methods to Enhance & Maintain Channel Integrity in the Watershed	12/8/16	1/18/17	Engineering, Natural Science Academy, Consultants, Others
138	Methods to Limit the amount of Development in the Flood Plain	12/8/16	1/18/17	Engineering, Natural Science Academy, Consultants, Others
139	Develop Trail Systems for Walking, Biking, and Jogging	2/9/17	5/3/17	Engineering, Planning, Consultants
140	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands	2/9/17	5/3/17	Engineering, Parks & Recreation, Planning, Consultant
141	Identify Major Drainage Projects for Design & Construction (Phase II Projects)	2/9/17	3/22/17	Engineering, Natural Science Academy, Consultants, Others
142	RFPs for Major Drainage Projects (Design) - (Phase II Projects)	5/4/17	6/14/17	Engineering, Consultant
143	Start Acquiring Property for Stormwater Facilities	6/15/17	9/6/17	Engineering
144	Select Design Consultants for Major Drainage Projects (Design) - (Phase II Projects)	6/15/17	5/30/18	Engineering
145	Commission Approval of Consultants (Drainage Projects)	9/7/17	9/27/17	Engineering
146	NTP - Design Major Drainage Projects (Phase - II)	9/28/17	9/28/17	Engineering
147	Blid Major Drainage Projects (Phase - II)	9/29/17	4/12/18	Engineering
148	Construct Major Drainage Projects (Phase - II)	5/31/18	5/31/18	Engineering
		6/1/18	6/27/19	Engineering, Construction Contractors

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

149	Phase III - Butler Creek Watershed	6/12/14	3/5/20
150	Inventory and Inspect Existing Stormwater Structures	6/12/14	3/18/15
151	Assemble Historical Monitoring Data	6/12/14	7/23/14
152	Download Inventory Data into GIS and Database	3/19/15	8/5/15
153	Develop a Rain-Gage Grid System	7/24/14	10/15/14
154	RIP - Watershed Assessment & Analysis	8/6/15	10/28/15
155	Select Consultant(s) for Watershed Assessment & Analysis	10/29/15	11/11/15
156	Commission Approval of Consultant (Watershed Assessment & Analysis)	11/12/15	12/1/15
157	NTP - Watershed Assessment & Analysis	12/2/15	12/2/15
158	Evaluate Receiving Waters	12/3/15	2/3/16
159	Floodplain Management Assessment	12/3/15	2/3/16
160	Review City/County Master Plan(s)	12/3/15	2/3/16
161	Determine Estimated Population/Growth/Change	12/3/15	2/3/16
162	Estimate Existing Land Use	2/4/16	4/6/16
163	Estimate Existing Impervious Cover (Percentage)	2/4/16	4/6/16
164	Evaluate Existing Land Use Codes & Zoning	4/7/16	6/8/16
165	Revised & Establish New Land Use Codes	2/4/16	4/6/16
166	Link Watershed/Stormwater and Land Use Together	6/9/16	7/20/16
167	Redefine Watershed & Subwatershed Boundaries	6/9/16	7/20/16
168	Build-Out Analysis (Full Development of Zoning)	6/9/16	7/20/16
169	Estimate Existing and Future Impervious Cover	7/21/16	8/31/16
170	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)	9/1/16	2/15/17
171	Analyze Water Quality	2/16/17	6/21/17
172	Implement Short and Long-term BMPs in Strategic Areas	6/22/17	9/13/17
173	Methods to Maintaining a Connected Buffer System in the Watershed	9/14/17	11/15/17
174	Methods to Reduce Flood Damage from Current Levels	9/14/17	10/25/17
175	Methods to Reduce Pollutant from Current Levels	9/14/17	10/25/17
176	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed	9/14/17	10/25/17
177	Methods to Enhance & Maintain Channel Integrity in the Watershed	9/14/17	10/25/17
178	Methods to Limit the amount of Development in the Flood Plain	9/14/17	10/25/17
179	Develop Trail Systems for Walking, Biking, and Jogging	11/16/17	10/25/17
180	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands	11/16/17	2/7/18
181	Identify Major Drainage Projects for Design & Construction (Phase III Projects)	2/8/18	12/27/17
182	RIPs for Major Drainage Projects (Design) - (Phase III Projects)	3/22/18	3/21/18
183	Start Acquiring Property for Stormwater Facilities	3/22/18	6/13/18
184	Select Design Consultants for Major Drainage Projects (Design) - (Phase III Projects)	6/14/18	3/6/19
185	Commission Approval of Consultants (Drainage Projects)	7/5/18	7/4/18
186	NTP - Design Major Drainage Projects (Phase - III)	7/6/18	7/5/18
187	Bid Major Drainage Projects (Phase - III)	3/7/19	1/17/19
188	Construct Major Drainage Projects (Phase - III)	3/8/19	3/7/19
			3/5/20

Engineering, Construction Contractors

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

Phase IV - Rock Creek Watershed		3/19/15	1/7/21
189	Inventory and Inspect Existing Stormwater Structures	3/19/15	12/23/15
190	Assemble Historical Monitoring Data	3/19/15	Engineering, Consultant
191	Download Inventory Data into GIS and Database	12/24/15	Engineering, Consultant
192	Develop a Rain-Gage Grid System	4/30/15	Engineering
193	RFP - Watershed Assessment & Analysis	5/12/16	8/3/16
194	Select Consultant(s) for Watershed Assessment & Analysis	8/4/16	Engineering
195	Commission Approval of Consultant (Watershed Assessment & Analysis)	8/18/16	Engineering
196	NTP - Watershed Assessment & Analysis	9/7/16	Engineering
197	Evaluate Receiving Waters	9/8/16	Engineering, Consultant
198	Floodplain Management Assessment	9/8/16	Engineering, Planning, Consultants
199	Review City/County Master Plan(s)	9/8/16	Engineering, Planning, Consultants
200	Determine Estimated Population/Growth/Change	9/8/16	Engineering, Planning, Consultants
201	Estimate Existing Impervious Cover (Percentage)	11/10/16	Engineering, Planning, Consultants
202	Evaluate Existing Land Use Codes & Zoning	11/10/16	Engineering, Planning, Consultants
203	Revised & Establish New Land Use Codes	1/12/17	Engineering, Planning, Consultants
204	Link Watershed/Stormwater and Land Use Together	11/10/16	Engineering, Planning, Consultants
205	Redefine Watershed & Subwatershed Boundaries	3/16/17	Engineering, Planning, Consultants
206	Build-Out Analysis (Full Development of Zoning)	3/16/17	Engineering, Planning, Consultants
207	Estimate Existing and Future Impervious Cover	4/27/17	Engineering, Planning, Consultants
208	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)	6/8/17	Engineering, Consultant
209	Analyze Water Quality	11/23/17	Engineering, Consultant
210	Implement Short and Long-term BMPs in Strategic Areas	3/29/18	Engineering, Natural Science Academy, Consultants, Others
211	Methods to Maintaining a Connected Buffer System in the Watershed	6/21/18	Engineering, Natural Science Academy, Consultants, Others
212	Methods to Reduce Flood Damage from Current Levels	6/21/18	Engineering, Natural Science Academy, Consultants, Others
213	Methods to Reduce Pollutant from Current Levels	6/21/18	Engineering, Natural Science Academy, Consultants, Others
214	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed	6/21/18	Engineering, Natural Science Academy, Consultants, Others
215	Methods to Enhance & Maintain Channel Integrity in the Watershed	6/21/18	Engineering, Natural Science Academy, Consultants, Others
216	Methods to Limit the amount of Development in the Flood Plain	6/21/18	Engineering, Natural Science Academy, Consultants, Others
217	Develop Trail Systems for Walking, Biking, and Jogging	6/21/18	Engineering, Planning, Consultants
218	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands	8/23/18	Engineering, Parks & Recreation, Planning, Consultant
219	Identify Major Drainage Projects for Design & Construction (Phase IV Projects)	8/23/18	Engineering, Natural Science Academy, Consultants, Others
220	RFPs for Major Drainage Projects (Design) - (Phase IV Projects)	11/15/18	Engineering, Consultant
221	Start Acquiring Property for Stormwater Facilities	12/27/18	Engineering
222	Select Design Consultants for Major Drainage Projects (Design) - (Phase IV Projects)	12/27/18	Engineering
223	Commission Approval of Consultants (Drainage Projects)	3/21/19	Engineering
224	NTP - Design Major Drainage Projects (Phase - IV)	4/11/19	Engineering
225	Bid Major Drainage Projects (Phase - IV)	4/12/19	Engineering
226	Construct Major Drainage Projects (Phase - IV)	12/12/19	Engineering
227		12/13/19	Engineering, Construction Contractors

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

229	Phase V - Oates Creek Watershed				
230	Inventory and Inspect Existing Stormwater Structures				
231	Assemble Historical Monitoring Data	12/24/15	10/14/21		
232	Download Inventory Data into GIS and Database	12/24/15	2/3/16	Engineering, Consultant	
233	Develop a Rain-Gage Grid System	9/29/16	2/15/17	Engineering, Consultant	
234	RFP - Watershed Assessment & Analysis	2/4/16	4/27/16	Engineering	
235	Select Consultant(s) for Watershed Assessment & Analysis	2/16/17	5/10/17	Engineering	
236	Commission Approval of Consultant (Watershed Assessment & Analysis)	5/11/17	5/24/17	Engineering	
237	NTP - Watershed Assessment & Analysis	5/25/17	6/13/17	Engineering	
238	Evaluate Receiving Waters	6/14/17	6/14/17	Engineering	
239	Floodplain Management Assessment	6/15/17	8/16/17	Engineering, Consultant	
240	Review City/County Master Plan(s)	6/15/17	8/16/17	Engineering, Planning, Consultants	
241	Determine Estimated Population/Growth/Change	6/15/17	8/16/17	Engineering, Planning, Consultants	
242	Estimate Existing Land Use	8/17/17	10/18/17	Engineering, Planning, Consultants	
243	Estimate Existing Impervious Cover (Percentage)	8/17/17	10/18/17	Engineering, Planning, Consultants	
244	Evaluate Existing Land Use Codes & Zoning	8/17/17	10/18/17	Engineering, Consultant	
245	Revised & Establish New Land Use Codes	10/19/17	12/20/17	Engineering, Planning, Consultants	
246	Link Watershed/Stormwater and Land Use Together	8/17/17	10/18/17	Engineering, Planning, Consultants	
247	Redefine Watershed & Subwatershed Boundaries	12/21/17	1/31/18	Engineering, Planning, Consultants	
248	Build Out Analysis (Full Development of Zoning)	12/21/17	1/31/18	Engineering, Planning, Consultants	
249	Estimate Existing and Future Impervious Cover	2/1/18	3/14/18	Engineering, Planning, Consultants	
250	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)	3/15/18	8/29/18	Engineering, Planning, Consultants	
251	Analyze Water Quality	8/30/18	1/2/19	Engineering, Consultant	
252	Implement Short and Long-term BMPs in Strategic Areas	1/3/19	3/27/19	Engineering, Natural Science Academy, Consultants, Others	
253	Methods to Maintaining a Connected Buffer System in the Watershed	3/28/19	5/29/19	Engineering, Natural Science Academy, Consultants, Others	
254	Methods to Reduce Flood Damage from Current Levels	3/28/19	5/8/19	Engineering, Natural Science Academy, Consultants, Others	
255	Methods to Reduce Pollutant from Current Levels	3/28/19	5/8/19	Engineering, Natural Science Academy, Consultants, Others	
256	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed	3/28/19	5/8/19	Engineering, Natural Science Academy, Consultants, Others	
257	Methods to Enhance & Maintain Channel Integrity in the Watershed	3/28/19	5/8/19	Engineering, Natural Science Academy, Consultants, Others	
258	Methods to Limit the amount of Development in the Flood Plain	3/28/19	5/8/19	Engineering, Natural Science Academy, Consultants, Others	
259	Develop Trail Systems for Walking, Biking, and Jogging	5/30/19	8/21/19	Engineering, Planning, Consultants	
260	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands	5/30/19	7/10/19	Engineering, Parks & Recreation, Planning, Consultant	
261	Identify Major Drainage Projects for Design & Construction (Phase V Projects)	8/22/19	10/2/19	Engineering, Natural Science Academy, Consultants, Others	
262	RFPs for Major Drainage Projects (Design) - (Phase V Projects)	10/3/19	12/25/19	Engineering, Consultant	
263	Start Acquiring Property for Stormwater Facilities	10/3/19	9/16/20	Engineering	
264	Select Design Consultants for Major Drainage Projects (Design) - (Phase V Projects)	12/26/19	1/15/20	Engineering	
265	Commission Approval of Consultants (Drainage Projects)	1/16/20	1/16/20	Engineering	
266	NTP - Design Major Drainage Projects (Phase - V)	1/17/20	7/30/20	Engineering	
267	Bid Major Drainage Projects (Phase - V)	9/17/20	9/17/20	Engineering	
268	Construct Major Drainage Projects (Phase - V)	9/18/20	10/14/21	Engineering, Construction Contractors	

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

269	Phase VI - Spirit Creek Watershed		9/23/16	6/23/22	
270	Inventory and Inspect Existing Stormwater Structures		9/23/16	7/5/17	Engineering Consultant
271	Assemble Historical Monitoring Data		9/29/16	11/9/16	Engineering Consultant
272	Download Inventory Data into GIS and Database		7/6/17	11/22/17	Engineering Consultant
273	Develop a Rain-Gage Grid System		11/10/16	2/1/17	Engineering
274	RFP - Watershed Assessment & Analysis		11/23/17	2/14/18	Engineering
275	Select Consultant(s) for Watershed Assessment & Analysis		2/15/18	2/28/18	Engineering
276	Commission Approval of Consultant (Watershed Assessment & Analysis)		3/1/18	3/20/18	Engineering
277	NTP - Watershed Assessment & Analysis		3/21/18	3/21/18	Engineering
278	Evaluate Receiving Waters		3/22/18	5/23/18	Engineering Consultant
279	Floodplain Management Assessment		3/22/18	5/23/18	Engineering, Planning, Consultants
280	Review City/County Master Plan(s)		3/22/18	5/23/18	Engineering, Planning, Consultants
281	Determine Estimated Population/Growth/Change		3/22/18	5/23/18	Engineering, Planning, Consultants
282	Estimate Existing Land Use		5/24/18	7/25/18	Engineering, Planning, Consultants
283	Estimate Existing Impervious Cover (Percentage)		5/24/18	7/25/18	Engineering Consultant
284	Evaluate Existing Land Use Codes & Zoning		5/24/18	7/25/18	Engineering, Planning, Consultants
285	Revised & Establish New Land Use Codes		7/26/18	9/26/18	Engineering, Planning, Consultants
286	Link Watershed/Stormwater and Land Use Together		5/24/18	7/25/18	Engineering, Planning, Consultants
287	Redefine Watershed & Subwatershed Boundaries		9/27/18	11/7/18	Engineering, Planning, Consultants
288	Build-Out Analysis (Full Development of Zoning)		9/27/18	11/7/18	Engineering, Planning, Consultants
289	Estimate Existing and Future Impervious Cover		11/8/18	12/19/18	Engineering, Planning, Consultants
290	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)		12/20/18	6/5/19	Engineering Consultant
291	Analyze Water Quality		6/6/19	10/9/19	Engineering Consultant
292	Implement Short and Long-term BMPs in Strategic Areas		10/10/19	1/1/20	Engineering, Natural Science Academy, Consultants, Others
293	Methods to Maintaining a Connected Buffer System in the Watershed		1/2/20	3/4/20	Engineering, Natural Science Academy, Consultants, Others
294	Methods to Reduce Flood Damage from Current Levels		1/2/20	2/12/20	Engineering, Natural Science Academy, Consultants, Others
295	Methods to Reduce Pollutant from Current Levels		1/2/20	2/12/20	Engineering, Natural Science Academy, Consultants, Others
296	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed		1/2/20	2/12/20	Engineering, Natural Science Academy, Consultants, Others
297	Methods to Enhance & Maintain Channel Integrity in the Watershed		1/2/20	2/12/20	Engineering, Natural Science Academy, Consultants, Others
298	Methods to Limit the amount of Development in the Flood Plain		1/2/20	2/12/20	Engineering, Planning, Consultants
299	Develop Trail Systems for Walking, Biking, and Jogging		3/5/20	5/27/20	Engineering, Parks & Recreation Planning, Consultant
300	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands		3/5/20	4/15/20	Engineering, Natural Science Academy, Consultants, Others
301	Identify Major Drainage Projects for Design & Construction (Phase VI Projects)		5/28/20	7/8/20	Engineering Consultant
302	RFPs for Major Drainage Projects (Design) - (Phase VI Projects)		7/9/20	9/30/20	Engineering
303	Start Acquiring Property for Stormwater Facilities		7/9/20	6/23/21	Engineering
304	Select Design Consultants for Major Drainage Projects (Design) - (Phase VI Projects)		10/1/20	10/21/20	Engineering
305	Commission Approval of Consultants (Drainage Projects)		10/22/20	10/22/20	Engineering
306	NTP - Design Major Drainage Projects (Phase - VI)		10/23/20	5/6/21	Engineering
307	Bid Major Drainage Projects (Phase - VI)		6/24/21	6/23/22	Engineering
308	Construct Major Drainage Projects (Phase - VI)		6/25/21	6/23/22	Engineering, Construction Contractors

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

309	Phase VII - Little Split Creek Watershed		7/6/17	3/30/23	
310	Inventory and Inspect Existing Stormwater Structures		7/6/17	4/11/18	Engineering, Consultant
311	Assemble Historical Monitoring Data		7/6/17	8/16/17	Engineering, Consultant
312	Download Inventory Data into GIS and Database		4/12/18	8/29/18	Engineering, Consultant
313	Develop a Rain-Gage Grid System		8/27/17	11/8/17	Engineering
314	RFP - Watershed Assessment & Analysis		8/30/18	11/21/18	Engineering
315	Select Consultant(s) for Watershed Assessment & Analysis		11/22/18	12/5/18	Engineering
316	Commission Approval of Consultant (Watershed Assessment & Analysis)		12/6/18	12/25/18	Engineering
317	NTP - Watershed Assessment & Analysis		12/26/18	12/26/18	Engineering
318	Evaluate Receiving Waters		12/27/18	2/27/19	Engineering, Consultant
319	Floodplain Management Assessment		12/27/18	2/27/19	Engineering, Planning, Consultants
320	Review City/County Master Plan(s)		12/27/18	2/27/19	Engineering, Planning, Consultants
321	Determine Estimated Population/Growth/Change		12/27/18	2/27/19	Engineering, Planning, Consultants
322	Estimate Existing Land Use		2/28/19	5/1/19	Engineering, Planning, Consultants
323	Estimate Existing Impervious Cover (Percentage)		2/28/19	5/1/19	Engineering, Planning, Consultants
324	Evaluate Existing Land Use Codes & Zoning		2/28/19	5/1/19	Engineering, Planning, Consultants
325	Revised & Establish New Land Use Codes		5/2/19	7/3/19	Engineering, Planning, Consultants
326	Link Watershed Stormwater and Land Use Together		2/28/19	5/1/19	Engineering, Planning, Consultants
327	Redefine Watershed & Subwatershed Boundaries		7/4/19	8/14/19	Engineering, Planning, Consultants
328	Build-Out Analysis (Full Development of Zoning)		7/4/19	8/14/19	Engineering, Planning, Consultants
329	Estimate Existing and Future Impervious Cover		8/15/19	9/25/19	Engineering, Planning, Consultants
330	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)		9/26/19	3/11/20	Engineering, Planning, Consultant
331	Analyze Water Quality		3/12/20	7/15/20	Engineering, Consultant
332	Implement Short and Long-term BMPs in Strategic Areas		7/16/20	10/7/20	Engineering, Natural Science Academy, Consultants, Others
333	Methods to Maintaining a Connected Buffer System in the Watershed		10/8/20	12/9/20	Engineering, Natural Science Academy, Consultants, Others
334	Methods to Reduce Flood Damage from Current Levels		10/8/20	11/18/20	Engineering, Natural Science Academy, Consultants, Others
335	Methods to Reduce Pollutant from Current Levels		10/8/20	11/18/20	Engineering, Natural Science Academy, Consultants, Others
336	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed		10/8/20	11/18/20	Engineering, Natural Science Academy, Consultants, Others
337	Methods to Enhance & Maintain Channel Integrity in the Watershed		10/8/20	11/18/20	Engineering, Natural Science Academy, Consultants, Others
338	Methods to Limit the amount of Development in the Flood Plain		10/8/20	11/18/20	Engineering, Natural Science Academy, Consultants, Others
339	Develop Trail Systems for Walking, Biking, and Jogging		10/8/20	11/18/20	Engineering, Planning, Consultants
340	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands		12/10/20	3/3/21	Engineering, Parks & Recreation, Planning, Consultant
341	Identify Major Drainage Projects for Design & Construction (Phase VII Projects)		12/10/20	1/20/21	Engineering, Natural Science Academy, Consultants, Others
342	RFPs for Major Drainage Projects (Design) - (Phase VII Projects)		3/4/21	4/14/21	Engineering, Consultant
343	Start Acquiring Property for Stormwater Facilities		4/15/21	7/7/21	Engineering
344	Select Design Consultants for Major Drainage Projects (Design) - (Phase VII Projects)		4/15/21	3/30/22	Engineering
345	Commission Approval of Consultants (Drainage Projects)		7/8/21	7/28/21	Engineering
346	NTP - Design Major Drainage Projects (Phase - VII)		7/29/21	7/29/21	Engineering
347	Bid Major Drainage Projects (Phase - VII)		7/30/21	2/10/22	Engineering
348	Construct Major Drainage Projects (Phase - VII)		3/31/22	3/31/22	Engineering
			4/1/22	3/30/23	Engineering, Construction Contractors

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

349	Phase VIII - McLean Creek Watershed		4/12/18	1/4/24	
350	Inventory and Inspect Existing Stormwater Structures		4/12/18	1/16/19	Engineering, Consultant
351	Assemble Historical Monitoring Data		4/12/18	5/23/18	Engineering, Consultant
352	Download Inventory Data into GIS and Database		1/17/19	6/5/19	Engineering, Consultant
353	Develop a Rain-Gage Grid System		5/24/18	8/15/18	Engineering
354	RFP - Watershed Assessment & Analysis		6/6/19	8/28/19	Engineering
355	Select Consultant(s) for Watershed Assessment & Analysis		8/29/19	9/11/19	Engineering
356	Commission Approval of Consultant (Watershed Assessment & Analysis)		9/12/19	10/1/19	Engineering
357	NTP - Watershed Assessment & Analysis		10/2/19	10/2/19	Engineering
358	Evaluate Receiving Waters		10/3/19	12/4/19	Engineering, Consultant
359	Floodplain Management Assessment		10/3/19	12/4/19	Engineering, Planning, Consultants
360	Review City/County Master Plan(s)		10/3/19	12/4/19	Engineering, Planning, Consultants
361	Determine Estimated Population/Growth/Change		10/3/19	12/4/19	Engineering, Planning, Consultants
362	Estimate Existing Land Use		12/5/19	2/5/20	Engineering, Planning, Consultants
363	Estimate Existing Impervious Cover (Percentage)		12/5/19	2/5/20	Engineering, Planning, Consultants
364	Evaluate Existing Land Use Codes & Zoning		12/5/19	2/5/20	Engineering, Planning, Consultants
365	Revised & Establish New Land Use Codes		2/6/20	4/8/20	Engineering, Planning, Consultants
366	Link Watershed/Stormwater and Land Use Together		12/5/19	2/5/20	Engineering, Planning, Consultants
367	Redefine Watershed & Subwatershed Boundaries		4/9/20	5/20/20	Engineering, Planning, Consultants
368	Build-Out Analysis (Full Development of Zoning)		4/9/20	5/20/20	Engineering, Planning, Consultants
369	Estimate Existing and Future Impervious Cover		5/21/20	7/1/20	Engineering, Planning, Consultants
370	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)		7/2/20	12/16/20	Engineering, Consultant
371	Analyze Water Quality		12/17/20	4/21/21	Engineering, Consultant
372	Implement Short and Long-term BMPs in Strategic Areas		4/22/21	7/14/21	Engineering, Natural Science Academy, Consultants, Others
373	Methods to Maintaining a Connected Buffer System in the Watershed		7/15/21	9/15/21	Engineering, Natural Science Academy, Consultants, Others
374	Methods to Reduce Flood Damage from Current Levels		7/15/21	8/25/21	Engineering, Natural Science Academy, Consultants, Others
375	Methods to Reduce Pollutant from Current Levels		7/15/21	8/25/21	Engineering, Natural Science Academy, Consultants, Others
376	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed		7/15/21	8/25/21	Engineering, Natural Science Academy, Consultants, Others
377	Methods to Enhance & Maintain Channel Integrity in the Watershed		7/15/21	8/25/21	Engineering, Natural Science Academy, Consultants, Others
378	Methods to Limit the amount of Development in the Flood Plain		7/15/21	8/25/21	Engineering, Natural Science Academy, Consultants, Others
379	Develop Trail Systems for Walking, Biking, and Jogging		7/15/21	8/25/21	Engineering, Planning, Consultants
380	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands		9/16/21	12/8/21	Engineering, Parks & Recreation, Planning, Consultant
381	Identify Major Drainage Projects for Design & Construction (Phase VIII Projects)		9/16/21	10/27/21	Engineering, Natural Science Academy, Consultants, Others
382	RFPs for Major Drainage Projects (Design) - (Phase VIII Projects)		12/9/21	1/19/22	Engineering, Consultant
383	Start Acquiring Property for Stormwater Facilities		1/20/22	4/13/22	Engineering
384	Select Design Consultants for Major Drainage Projects (Design) - (Phase VIII Projects)		4/14/22	1/4/23	Engineering
385	Commission Approval of Consultants (Drainage Projects)		5/5/22	5/4/22	Engineering
386	NTP - Design Major Drainage Projects (Phase - VIII)		5/6/22	5/5/22	Engineering
387	Bid Major Drainage Projects (Phase - VIII)		1/5/23	11/17/22	Engineering
388	Construct Major Drainage Projects (Phase - VIII)		1/6/23	1/5/23	Engineering
				1/4/24	Engineering, Construction Contractors

PROPOSED STORMWATER IMPLEMENTATION SCHEDULE

389	Phase IX - Phinizy Swamp Watershed	1/17/19	4/9/26
390	Inventory and Inspect Existing Stormwater Structures	1/17/19	10/23/19
391	Assemble Historical Monitoring Data	1/17/19	2/27/19
392	Download Inventory Data into GIS and Database	10/24/19	3/11/20
393	Develop a Rain-Gage Grid System	2/28/19	5/22/19
394	RFP - Watershed Assessment & Analysis	3/17/20	6/3/20
395	Select Consultant(s) for Watershed Assessment & Analysis	6/4/20	6/17/20
396	Commission Approval of Consultant (Watershed Assessment & Analysis)	6/18/20	7/1/20
397	NTP - Watershed Assessment & Analysis	7/8/20	7/8/20
398	Evaluate Receiving Waters	7/9/20	9/9/20
399	Floodplain Management Assessment	7/9/20	9/9/20
400	Review City/County Master Plan(s)	7/9/20	9/9/20
401	Determine Estimated Population/Growth/Change	7/9/20	9/9/20
402	Estimate Existing Land Use	9/10/20	11/11/20
403	Estimate Existing Impervious Cover (Percentage)	9/10/20	11/11/20
404	Evaluate Existing Land Use Codes & Zoning	11/12/20	1/13/21
405	Revised & Establish New Land Use Codes	9/10/20	11/11/20
406	Link Watershed/Stormwater and Land Use Together	9/10/20	11/11/20
407	Redefine Watershed & Subwatershed Boundaries	1/14/21	2/24/21
408	Build-Out Analysis (Full Development of Zoning)	1/14/21	2/24/21
409	Estimate Existing and Future Impervious Cover	2/25/21	4/7/21
410	Analyze Existing Structures for Present & Future Use (Hydrology and Hydraulics)	4/8/21	9/22/21
411	Analyze Water Quality	9/23/21	1/26/22
412	Implement Short and Long-term BMPs in Strategic Areas	1/27/22	4/20/22
413	Methods to Maintaining a Connected Buffer System in the Watershed	4/21/22	6/22/22
414	Methods to Reduce Flood Damage from Current Levels	4/21/22	6/1/22
415	Methods to Reduce Pollutant from Current Levels	4/21/22	6/1/22
416	Methods to Enhance & Maintain the Overall Aquatic Diversity in the Watershed	4/21/22	6/1/22
417	Methods to Enhance & Maintain Channel Integrity in the Watershed	4/21/22	6/1/22
418	Methods to Limit the amount of Development in the Flood Plain	4/21/22	6/1/22
419	Develop Trail Systems for Walking, Biking, and Jogging	4/21/22	6/1/22
420	Methods to Enhance & Maintain Current Wetlands or Constructed Wetlands	6/23/22	9/14/22
421	Identify Major Drainage Projects for Design & Construction (Phase IX Projects)	6/23/22	8/3/22
422	RFPs for Major Drainage Projects (Design) - (Phase IX Projects)	9/15/22	10/26/22
423	Start Acquiring Property for Stormwater Facilities	10/27/22	1/18/23
424	Select Design Consultants for Major Drainage Projects (Design) - (Phase IX Projects)	10/27/22	10/11/23
425	Commission Approval of Consultants (Drainage Projects)	1/19/23	2/8/23
426	NTP - Design Major Drainage Projects (Phase - IX)	2/9/23	2/9/23
427	Bid Major Drainage Projects (Phase - IX)	7/10/23	8/24/23
428	Construct Major Drainage Projects (Phase - IX)	10/12/23	10/12/23
429	IMPLEMENTATION AND PROJECTS COMPLETED	10/13/23	4/9/26
430	Implementation and Projects Completed	4/10/26	4/10/26
		4/10/26	Engineering

CITY OF AUGUSTA ESTIMATED STORMWATER CASH FLOW SUMMARY

Engineering	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	TOTAL
Stormwater Inventory	\$0	\$200,000	\$1,000,000	\$1,000,000	\$500,000	\$300,000	\$250,000	\$3,250,000
Watershed(s) Based Planning and Engineering	\$0	\$200,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,700,000
Education, Research, and Development	\$0	\$15,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$165,000
General Engineering	\$0	\$40,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$790,000
Subtotal:	\$0	\$455,000	\$1,680,000	\$1,680,000	\$1,180,000	\$980,000	\$930,000	\$6,905,000

Enforcements	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	TOTAL
Implementation of Ordinances and Design Manuals	\$0	\$15,000	\$100,000	\$25,000	\$5,000	\$5,000	\$5,000	\$155,000
Subtotal:	\$0	\$15,000	\$100,000	\$25,000	\$5,000	\$5,000	\$5,000	\$155,000

Operation and Preventative Maintenance	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	TOTAL
Catchbasin/Junction/Outfall Maintenance	\$150,000	\$150,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,800,000
Pond/Lake Maintenance	\$0	\$0	\$250,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,250,000
ROW Maintenance/Mowing	\$0	\$0	\$1,000,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$5,800,000
Storm Sewer Maintenance	\$0	\$0	\$100,000	\$500,000	\$250,000	\$250,000	\$250,000	\$1,350,000
Ditch Maintenance	\$0	\$0	\$200,000	\$750,000	\$750,000	\$750,000	\$750,000	\$3,200,000
Easement Maintenance	\$0	\$0	\$100,000	\$400,000	\$300,000	\$200,000	\$200,000	\$1,200,000
Emergency Repairs	\$0	\$500,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,750,000
Bridge/Culvert Maintenance	\$40,000	\$0	\$500,000	\$750,000	\$750,000	\$750,000	\$750,000	\$3,540,000
Channel Creek Maintenance	\$0	\$0	\$200,000	\$500,000	\$400,000	\$400,000	\$400,000	\$1,900,000
Special Stormwater Structures (Levee, Dam, etc.)	\$0	\$0	\$75,000	\$175,000	\$100,000	\$100,000	\$100,000	\$550,000
Street Sweeping	\$0	\$0	\$250,000	\$250,000	\$750,000	\$250,000	\$250,000	\$1,250,000
Subtotal:	\$190,000	\$650,000	\$3,425,000	\$5,775,000	\$5,250,000	\$5,150,000	\$5,150,000	\$25,590,000

CITY OF AUGUSTA ESTIMATED STORMWATER CASH FLOW SUMMARY

Drainage Related Improvement Projects							
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Design	\$0	\$200,000	\$1,000,000	\$500,000	\$500,000	\$3,000,000	\$3,000,000
Land Acquisition	\$0	\$0	\$500,000	\$1,000,000	\$1,000,000	\$5,000,000	\$5,000,000
Construction	\$0	\$0	\$3,000,000	\$4,015,000	\$5,165,000	\$16,050,000	\$16,500,000
Subtotal:	\$0	\$200,000	\$4,500,000	\$5,515,000	\$6,665,000	\$24,050,000	\$24,500,000
							\$65,430,000

Equipment							
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Equipment Purchase	\$0	\$0	\$300,000	\$1,500,000	\$300,000	\$300,000	\$0
Equipment Maintenance	\$0	\$0	\$500,000	\$100,000	\$100,000	\$100,000	\$100,000
Subtotal:	\$0	\$0	\$800,000	\$1,600,000	\$400,000	\$400,000	\$100,000
							\$3,300,000

Material							
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Material Purchase	\$0	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Subtotal:	\$0	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
							\$600,000

ESTIMATED TOTAL ANNUAL EXPENSE							
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	\$2,190,000	\$4,125,000	\$13,880,000	\$17,340,000	\$16,267,250	\$33,380,013	\$33,512,563
	\$4,719,998	\$18,242,616	\$10,128,850	\$11,237,232	\$7,445,681	-\$15,987,432	-\$39,552,095
							\$120,694,826
							-\$39,552,095

SPLOST VI. Continued passing of future SPLOST is essential to the drainage infrastructure of Augusta.

Represents the end of SPLOST VI funds. If SPLOST VII fails, these values reduce to \$0.

An estimated \$10,239,091 of the General Budget through salaries can be saved over a 5 year period.

Environmental Services Street Sweeping.

EXISTING AND POTENTIAL CAPITAL IMPROVEMENT PROJECTS

NO.	DRAINAGE RELATED PROJECTS	FUNDING STATUS	ESTIMATED FUNDING TIMEFRAME	PROJECT COST
1	Hyers Pond Dredging and Maintenance (Lake Aumond Dredging Project)	Funded	2012	\$100,000
2	Upper Lake Aumond Dredging and Maintenance (Lake Olmstead Dredging Project)	Funded	2012	\$400,000
3	Lower Lake Aumond Dredging and Maintenance (Lake Olmstead Dredging Project)	Funded	2012	\$1,500,000
4	Upper Lake Olmstead Dredging and Maintenance (Lake Olmstead Dredging Project)	Funded	2012	\$2,000,000
5	Warren Lake Dredging and Maintenance	Funded	2007	\$2,000,000
6	Old McDuffie Road Street and Drainage Improvements	Funded	2012 - 2014	\$840,000
7	Westside Drive Drainage Improvements	Funded	2012 - 2014	\$600,000
8	East Augusta Roadway and Drainage Improvements - Phase II (Aiken Street Channel Improvements)	Partially Funded	2012 - 2013	\$4,000,000
9	7th St over Augusta Canal	Partially Funded	2012 - 2013	\$1,100,000
10	Dover Lyman Street and Drainage Improvements	Partially Funded	2012 - 2015	\$4,000,000
11	Hyde Park / Wilkerson Gardens Drainage Improvements	Partially Funded	2012 - 2019	\$13,235,100
12	Levee Maintenance	Partially Funded	2012 - 2015	\$800,000
13	Old Waynesboro Road over Spirit Creek	Partially Funded	2012 - 2014	\$1,500,000
14	Scotts Way over Raes Creek	Partially Funded	2012 - 2014	\$1,500,000
15	Berckmans Road over Raes Creek	Partially Funded	2012 - 2015	\$1,800,000
16	Berckmans Road Realignment and Drainage Improvements	Partially Funded	2012 - 2015	\$2,700,000
17	Marks Church Road over Raes Creek	Partially Funded	2012 - 2014	\$1,000,000
18	Rocky Creek Flood Hazard Mitigation Project	Partially Funded	2012 - 2015	\$8,121,900
19	East Augusta Roadway and Drainage Improvements - Phase III (Azalea, Brunswick, and Albany Street Areas)	Not Funded	2013 - 2014	\$1,350,000
20	East Augusta Roadway and Drainage Improvements - Phase IV (Hornsby Area)	Not Funded	2014 - 2015	\$1,330,000
21	East Augusta Roadway and Drainage Improvements - Phase V (East Telfair and Japonica Drive Areas)	Not Funded	2016	\$800,000
22	East Augusta Roadway and Drainage Improvements - Phase VI (East View Subdivision)	Not Funded	2016	\$200,000


EXISTING AND POTENTIAL CAPITAL IMPROVEMENT PROJECTS

NO.	DRAINAGE RELATED PROJECTS	FUNDING STATUS	ESTIMATED FUNDING TIMEFRAME	PROJECT COST
23	East Augusta Roadway and Drainage Improvements – Phase VII (Riverside Park Area)	Not Funded	2016	\$1,300,000
24	East Augusta Roadway and Drainage Improvements – Phase VIII (Marion homes Area)	Not Funded	2017	\$2,700,000
25	Lower Lake Olmstead Dredging and Maintenance (Lake Olmstead Dredging Project)	Not Funded	2015	\$1,100,000
26	Beaver Dam Ditch Dredging and Maintenance	Not Funded	2013	\$100,000
27	Augusta Canal Dredging and Maintenance	Not Funded	2016 - 2017	\$2,000,000
28	Augusta Canal Flood Reduction Project	Not Funded	2013 - 2018	\$3,100,000
29	Rae's Creek Channel Maintenance/Restoration	Not Funded	2016 - 2018	\$4,000,000
30	Rocky Creek Channel Maintenance/Restoration	Not Funded	2016 - 2017	\$2,000,000
31	Rock Creek Channel Maintenance/Restoration	Not Funded	2016 - 2017	\$2,000,000
32	Oates Creek Channel Maintenance/Restoration/Channel Lining	Not Funded	2016 - 2017	\$2,000,000
33	Butler Creek Channel Maintenance/Restoration	Not Funded	2016 - 2017	\$2,000,000
34	Spirit Creek Channel Maintenance/Restoration	Not Funded	2016 - 2017	\$2,000,000
35	Little Spirit Creek Channel Maintenance/Restoration	Not Funded	2016 - 2017	\$1,500,000
36	McBean Creek Channel Maintenance/Restoration	Not Funded	2016 - 2017	\$1,500,000
37	Cranes Creek Channel Maintenance/Restoration	Not Funded	2016 - 2017	\$1,000,000
38	Phinizy Swamp Maintenance	Not Funded	2016 - 2017	\$1,000,000
39	Downtown Conceptual Infrastructure Plan	Not Funded	2016 - 2017	\$1,000,000
40	Greene Street and Drainage Improvements, Including Street Light and Signal Upgrades (13th Street to East Boundary Street)	Not Funded	2021 - 2022	\$10,000,000
41	Ellis Street and Drainage (13th Street to Sand Bar Ferry Rd.)	Not Funded	2018 - 2021	\$10,300,000
42	Broad Street and Drainage Improvements (Washington Road to Sand Bar Ferry)	Not Funded	2017 - 2022	\$16,000,000
43	Telfair Street and Drainage Improvements (15th Street to East Boundary Street)	Not Funded	2018 - 2022	\$15,000,000
44	13th Street and Drainage Improvements (RA Dent to Reynolds Street)	Not Funded	2017 - 2020	\$7,600,000
45	12th Street and Drainage Improvements (Telfair Street to Reynolds Street)	Not Funded	2017 - 2019	\$4,000,000

EXISTING AND POTENTIAL CAPITAL IMPROVEMENT PROJECTS

NO.	DRAINAGE RELATED PROJECTS	FUNDING STATUS	ESTIMATED FUNDING TIMEFRAME	PROJECT COST
46	Milledgeville Road Widening and Drainage Improvements (North Leg to Barton Chapel Road)	Not Funded	2015 - 2018	\$6,000,000
47	11th Street and Drainage Improvements (Wrightsboro Road to Reynolds Street)	Not Funded	2017 - 2020	\$7,200,000
48	10th Street and Drainage Improvements (Wrightsboro Road to Reynolds Street)	Not Funded	2019 - 2021	\$7,200,000
49	James Brown Street and Drainage Improvements (Wrightsboro Rd. to Reynolds Street)	Not Funded	2019 - 2022	\$6,200,000
50	8th Street and Drainage Improvements (Walton Way to Reynolds Street)	Not Funded	2020 - 2021	\$4,100,000
51	7th Street and Drainage Improvements (Twiggs Street to Reynolds Street)	Not Funded	2019 - 2022	\$9,900,000
52	6th Street and Drainage Improvements (Laney Walker Blvd. to Reynolds Street)	Not Funded	2021 - 2023	\$6,900,000
53	5th Street and Drainage Improvements (Laney Walker Blvd. To Reynolds Street)	Not Funded	2021 - 2024	\$11,600,000
54	4th Street and Drainage Improvements (Laney Walker Blvd. to Reynolds Street)	Not Funded	2021 - 2024	\$11,600,000
55	3rd Street and Drainage Improvement (Laney Walker Blvd. to Reynolds Street)	Not Funded	2022 - 2024	\$8,500,000
56	2nd Street and Drainage Improvements (Laney Walker Blvd. to Reynolds Street)	Not Funded	2023 - 2024	\$8,900,000
57	Planning, Design, and Construction of Regional Detention Ponds (County Wide)	Not Funded	2015 - 2025	\$20,000,000
58	Elimination of Unwarranted Detention Ponds (County Wide)	Not Funded	2017 - 2025	\$9,000,000
59	Constructed Wetlands (Countywide)	Not Funded	2025	\$3,500,000
60	Recreation Projects (Watershed Based)	Not Funded	2016 - 2025	\$20,000,000

TOTAL: \$284,677,000

 Projects that have been identified through SPLOST.

NOTE:

New storm related projects will be developed as watersheds and subbasins are analyzed and modeled.

5

PERTINENT INFORMATION REQUIRED IN THE CITY OF AUGUSTA, GA STORMWATER DATABASE/GIS

BRIDGE STRUCTURE
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Bridge Type:
Material Type:
Stream Crossing:
Condition Rating:
Condition Description:
Digital Photograph:
X-Coordinate:
Y-Coordinate:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
Estimated Date of Construction:
Estimated Date for Replacement:

CULVERT STRUCTURE
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Culvert Type:
Material Type:
Stream Crossing:
Condition Rating:
Condition Description:
Digital Photograph:
Culvert Shape:
Culvert Size:
X-Coordinate:
Y-Coordinate:
Upstream Elevation:
Downstream Elevation:
Culvert Length:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
Estimated Date of Construction:
Estimated Date for Replacement:

CATCHBASIN/INLET STRUCTURE
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Catchbasin/Inlet Type:
Material Type:
Condition Rating:
Condition Description:
Digital Photograph:
Inlet Shape:
Inlet Size:
X-Coordinate:
Y-Coordinate:
Invert Elevation(s) (in, out):
Ground Elevation:
Top Cover Elevation:
Land Use (Residential, etc.):
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
Estimated Date of Construction:
Estimated Date for Replacement:

OUTFALL STRUCTURE
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Outfall Type:
Material Type:
Condition Rating:
Condition Description:
Digital Photograph:
Outlet Shape:
Outlet Size
X-Coordinate:
Y-Coordinate:
Invert Elevation(s) (in, out):
Ground Elevation:
Receiving Stormwater Description:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
Estimated Date of Construction:
Estimated Date for Replacement:

JUNCTION STRUCTURE
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Junction Type:
Material Type:
Condition Rating:
Condition Description:
Digital Photograph:
Junction Shape:
Junction Size:
X-Coordinate:
Y-Coordinate:
Invert Elevation(s) (in, out):
Ground Elevation:
Top Cover Elevation:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
Estimated Date of Construction:
Estimated Date for Replacement:

PIPE STRUCTURE
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Material Type:
Condition Rating:
Condition Description:
Digital Photograph:
Pipe Shape:
Pipe Size:
Pipe Slope %:
Flow Direction:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
* Shape Deformation
* Settlement
Estimated Date of Construction:
Estimated Date for Replacement:

PERTINENT INFORMATION REQUIRED IN THE CITY OF AUGUSTA, GA STORMWATER DATABASE/GIS

DETENTION FACILITY
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Detention Type:
Condition Rating:
Condition Description:
Digital Photograph:
Pond Shape:
Pond Size:
Receiving Stormwater Description:
Outfall Description:
Regional Drainage Area/Boundary:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
Estimated Date of Construction:

RETENTION POND
ID No.
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Condition Rating:
Condition Description:
Digital Photograph:
Pond Shape:
Pond Size:
Receiving Stormwater Description:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:
Estimated Date of Construction:

STREAM CHANNEL
ID No.:
Station:
Channel Description:
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Type of Stream Channel:
Watershed/Basin:
Condition Rating:
Condition Description:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:

DITCH CHANNEL
ID No.:
Station:
Channel Description:
Commission District:
Type of Ditch Channel:
Watershed/Basin:
Subbasin/Subcatchment:
Condition Rating:
Condition Description:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:

SPECIAL STORMWATER STRUCTURES
ID No:
Stormwater Structure Description:
* Levee
* Dam
* Other
Watershed/Basin:
Subbasin/Subcatchment:
Condition Rating:
Condition Description:
Last Inspection Date:
Last Maintenance Date:
Maintenance Description:

EXISTING COMBINED SEWERS
ID No.:
Commission District:
Watershed/Basin:
Subbasin/Subcatchment:
Material Type:
Condition Description:
Pipe Shape:
Pipe Size:
Pipe Slope %:
Flow Direction:
Last Inspection Date:
Estimated Date of Separation:



Procurement Department

Mrs. Geri Sams, Director

MAILED

TO:

All Bidders
Phyllis Mills, Quality Assurance Analyst
Abie Ladson, Augusta Engineering Department

FROM:

Geri Sams *Geri Sams*
Procurement Director

DATE:

June 11, 2013

SUBJ:

Clarifications to the Specifications and Responses to Vendor's Questions

RFQ ITEM:

RFQ #13-149 Professional Services to Assess & Analyze Watersheds, Inventory Stormwater Facilities & Storm Conveyance for Engineering Department

RFQ DATE: Friday, June 21, 2013 @ 11:00 a.m.

ADDENDUM NO. 2

This Addendum shall form a part of the referenced RFQ Item: 13-149, and any agreement entered into in connection therewith equally as if bound into the original document. Acknowledge receipt of this addendum on the Attachment B form.

Clarifications to Specifications

Stormwater Utility Implementation Plan as noted per RFQ specifications on page 27 of 33. (Attached)

Responses to Vendor's Questions

Question #1: Page 26 of 33 states "(6) eight copies of RFQ". Please clarify how many we need to submit.....6 or 8.

Response #1: Please provide (6) six copies and (1) one original.

Question #2: Page 29 of 33 states that the evaluation criteria will include "A detailed description of the proposed technical approach to be taken for the performance of the required services – 25 points" but Page 28 of 33 outlines the response format/section and it does not request that we provide a detailed description of our technical approach.

Response #2: Please provide your technical approach in the Section 4: Related Experience and Success.

Question #3: Please clarify which section of the proposal outlined on page 28 of the RFQ should contain the detailed technical approach described in the evaluation criteria.

Response #3: Please see Response #2.

Room 605 - 530 Greene Street, Augusta Georgia 30901
(706) 821-2422 - Fax (706) 821-2811

www.augustaga.gov

Register at www.demandstar.com/supplier for automatic bid notification



Scan this QR code with your smartphone or camera equipped tablet to visit the Augusta, Georgia

Question #4: At the bottom of page 27, it is stated the 2012 concept presentation will be available for preparation of the proposal. How do we access it?

Response #4: Stormwater Utility Implementation Plan is attached. This is a copy of the 2012 concept presentation.

Question #5: It does not appear the requested watershed assessment is being dictated by the typical GA EPD program procedures so please specify the desired chemical water quality parameters and specific biological assessment methods (i.e. habitat assessment, benthics, fish, etc.) for this characterization.

Response #5: Please state your qualifications to perform water quality characterization for nitrogen and phosphorus nutrient species, as well as fecal coliform and chemical parameters such as pH, and hardness, and physical parameters such as color, temperature. There are no specific biological assessment methods required at this time, however please state your qualifications performing habitat assessments, benthic analysis, and fish assessments. Any specialty experience that may differentiate your firm should be included in the response.

Question #6: Is the 2003 Augusta Watershed Assessment available for review?

Response #6: It is not available for the RFQ response; however it follows standard GA EPD protocols and will be available during the scope development.

Question #7: Items 9 and 10 of the requested services consist of assisting in the development of automated rain (and stream?) gaging and water quality sampling networks. Is it AED's intent to purchase and install these networks in each watershed for use at the start of the September 2013 water quality data collection milestone or is the weekly data collection services to include manual sampling by the consultant?

Response #7: Please state any experience and qualifications regarding the development of monitoring networks for collecting environmental data. Any relevant information including equipment specifications, establishing communications protocols, performing timeseries analysis, performing remote sensing, and data warehousing and analysis should be included. Any specialty experience that may differentiate your firm should be included in the response.

Question #8: What is the intended duration of the water quality data collection effort by the Engineer?

Response #8: The water quality data collection will be dictated by the condition of each watershed, and currently has not been established.

Question #9: Is AED providing the database/spreadsheet formats required for all data submittals, and will the GIS Data model provided by AED include the base map of known or suspected existing stormwater assets in each watershed?

Response #9: Yes, it will be provided to the selected firms. Experience with industry standard data models and extensions of those data models should be discussed.

Question #10: Since the actual level of effort may vary based on the specific watershed assigned, we assume the detailed scope/schedule should be somewhat generic to be finalized upon negotiation of the task order.

Response #10: Yes, the qualifications should be specific enough to indicate experience in this type of work while being general enough to indicate the firm's ability to work in rural, suburban, and urban areas.

Question #11: In assessing floodplains/watersheds, is AED expecting any drainage basin analysis/hydraulic modeling or will it be acceptable to use established FIRM base flood elevations.

Response #11: Please state your qualifications to perform hydrologic and hydraulic modeling, and include software familiarity and experience, as well as any floodplain management experience.

Question #12: Page 27 of the RFQ states there are nine (9) watershed basins and a maximum of ten (10) firms may be selected. Our questions is would the City consider splitting the awards by the two different scopes - Asset Collection by water shed separate from Water Quality Characterization?

Response #12: If the review of qualifications indicates that one firm is particularly suited to water quality characterization, then that option would be negotiated with the responsible firm.

Question #13: Please clarify the role envisioned for the Southeastern Natural Sciences Academy at Phinizy Swamp related to items 11 thru 17 of Water Quality Characterization Services for each watershed.

Response #13: SNSA is expected to assist in the assessment and characterization of BMPs specific to each watershed in order to improve water quality in that basin. Their local research facility provides a unique tool to establish and document long-term trends in BMP effectiveness specific to each site.

Question #14: What accuracy of GIS data is required? Survey or mapping grade?

Response #14: Both will be required; please provide qualifications for both. At present, is anticipated that approximately 10% of the inventory will require survey grade, while all assets collected will need to have an asset assessment attached. The final product should be sufficient to accurately map and model the existing system.

Question #15: What contour interval is available from the City's GIS database?

Response #15: Two (2) foot contours are available from the City's database.

Question #16: We note that page 27 references the selection of up to ten firms; however, page 29 indicates the City intends to negotiate by order of rank. We interpret this to mean only one firm will be selected for negotiations. Please clarify.

Response #16: Sufficient qualified firms will be selected based on their ranking and will then enter negotiations to determine the scope.

Question #17: Please define the criteria the City expects to be provided in the data collection phase of task no. 3, 'assess floodplains'.

Response #17: Please provide your qualifications to document the floodplain by utilizing tools such as surveys, wetlands identification, and mapping tools.

Question #18: Does the city have a desired interval for the floodplain transects and the data to be collected?

Response #18: The transect intervals will depend on the historical FEMA, COE, and site survey information, as well as sites selected during the instrumentation phase of the assessment. It is expected that the number of transects will vary depending on the stream.

Question #19: What specific water quality data is required?

Response #19: Please see response #5 above.

Question #20: Please clarify the information expected in the schedule required on page 29. Page 28 refers to a schedule based on one watershed. We would assume each basin is of a different size and complexity.

Response #20: Please provide a schedule that represents your team's time commitment to achieve the Schedule goals outlined on Page 28. Please provide enough information that we may determine whether your team has sufficient resources to perform each schedule of work.

Question #21: Should proposer submit six (6) or eight (8) copies of the qualifications (There appears to be a conflict on page 26 of RFQ).

Response #21: Please see Response #2 above.

Question #22: The Evaluation Criteria on p. 29 of the RFP includes "a detailed description of the proposed technical approach to be taken for the performance of the required services" for 25 pts. However, the proposal requirements (p. 28 of the RFP) do not ask for an approach. Should we include a detailed technical approach as part of the proposed schedule (Section 6)?

Response #22: Please see response to Question #2.

Question #23: The Evaluation Criteria on p. 29 of the RFP includes "References" for 5 pts. But the proposal requirements, requirements (p. 28 of the RFP) do not ask for references. Should we include References with the Related Experience and Success (Section 4).

Response #23: Section 4 would be appropriate for References.

Question #24: It appears that Sections 4 (Related Experience and Success) and Sections 5 (Watershed Analysis & Assessment and Storm Conveyance System Inventory & Mapping experience during last 10-years) is requesting similar information. Can you provide additional information as to what is to be included in each section?

Response #24: There is some overlap between Sections 3, 4, and 5. Section 3 should introduce the team and their experience and successes with similar projects, but be focused more on team member abilities. Section 4 could include a narrative on similar projects, limitations experienced, and how any obstacles were overcome for success. Similarly, it could detail successful execution of any relevant projects, preferably including the proposed team for this project. Section 4 should also include the detailed description of the technical approach proposed for this scope. Section 5 should be a listing of similar projects, including team size, project duration, number of assets collected, number of watersheds evaluated, average basin size, etc. Section 5 should provide more numerical metrics than section 4.

Question #25: Is the concept presentation referred to in the RPQ (page 27) the presentation included as part of RFQ Item #13-160 (Stormwater Utility Program)?

Response #25: Please see response to Question #4.

Question #26: What is the required accuracy of the GIS data – specifically the horizontal location (x,y) and elevation (z)?

Response #26: Please see response to Question #14.

Question #27: On page 9, Section 1.16 requires: "Bidder shall provide a copy of all relevant licenses, certifications, including factory-training certificates for major equipment". Are there particular certification/licenses that the City will require as part of this project?

Response #27: For the purpose of the RFQ, the submission should include any certifications on team members or equipment that they feel is relevant to developing the scope of work.

Question #28: Can you provide additional information as to the role of the Southeastern Natural Science Academy? Will they provide services under Items 11 thru 17 of the Water Quality Characterization Services? Will the successful contractor coordinate the activities of the Academy?

Response #28: Please see response to Question #13.

Question #29: Page 27 indicated that a "maximum of ten (10) firms will be selected". Does Augusta plan to hire 9 consultants (one for each watershed)?

Response #29: Please see response to Question #16.

Please acknowledge addendum in your submittal

END ADDENDUM

Attachments: Stormwater Utility Implementation Plan (58 pages)

Augusta, GA Engineering Department

AGREEMENT

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

CONSULTANT SERVICES AGREEMENT

PROFESSIONAL SERVICES TO ASSESS & ANALYZE WATERSHEDS, INVENTORY

STORMWATER FACILITIES & STORM CONVEYANCE

PROJECT NUMBER: 328-041110-211828002

BETWEEN

AUGUSTA, GA ENGINEERING DEPARTMENT

AND

CONSTANTINE ENGINEERING

This Agreement is made and entered into this _____ day of _____, 2014 by and between Augusta, Georgia, hereinafter called the "**CITY**" and **CONSTANTINE ENGINEERING** a Corporation authorized to do business in Georgia, hereinafter called the "**CONSULTANT**."

Whereas, the **CITY** desires to engage a qualified and experienced consulting firm to furnish professional services to:

1). Assist in the conversion of digital records to GIS format; 2). Field Inventory Assets; 3). Characterize Receiving Waters; 4). Assist in the installation of a raingage network; 5). Assist in the development of hydrologic and hydraulic models of the system; 6). Assist in the development of a long-term water quality monitoring program; 7). Assist in the development of a mixed-use trails concept.

Whereas, the **CONSULTANT** has represented to the **CITY** that it is experienced and qualified to provide the services contained herein and the **CITY** has relied upon such representation.

Now, therefore, in consideration of the mutual promises and covenant herein contained, it is agreed by and between the **CITY** and the **CONSULTANT** that the **CONSULTANT** shall provide the design services of the Project.

DESIGN CRITERIA

The following publications shall be used as the basis for the engineering design services contained herein: Contract scoping documents regarding data quality, quantity, and deliverables.

The CONSULTANT shall gather from the CITY all available data and information pertinent to the performance of the services for the Project. The CITY shall have the final decision as to what data and information is pertinent

The CONSULTANT shall ensure that the data and information meet applicable standards as specified herein.

The CONSULTANT shall report in writing any discovery of errors or omissions contained in the data and information furnished by the CITY.

The CONSULTANT shall visit and become familiar with the Project site and shall become acquainted with local conditions involved in carrying out this Agreement. The CONSULTANT may request that a representative of the CITY be present during the site visit.

The CONSULTANT shall recommend and secure the CITY's written approval of, the manner of project plans presentation and the methods to be used in the plan preparation so that these plans can be best utilized, as determined by the CONSULTANT and approved by the CITY, in the orderly preparation of the detailed construction contract plans, specifications, and contracts. The AED Plans Preparation Guidelines, current edition, shall be utilized in the production of plans for the project. Upon receipt of the CITY's written approval of the manner of the project plan presentation and methods of plan preparation, the CONSULTANT shall proceed with implementation of plan preparation.

AMOUNT OF CONTRACT

It is agreed that the compensation hereinafter specified to perform the services (*see Scope of Services*) required by this Agreement includes both direct and indirect costs chargeable to the project.

AUGUSTA ENGINEERING DEPARTMENT

***Design and Engineering Services
(Rock Creek & McBean Creek Watershed)***

\$282,006.50

IN WITNESS WHEREOF, said parties have hereunto set their seals the day and year written below.

Executed on behalf of **CONSULTANT**

RECOMMEND FOR APPROVAL:

CONSULTANT FIRM:

Crotaine Engineering
Consultant Firm

[Signature]
Representative

Approval: Date: April 7, 2014
[ATTACHED CORPORATE SEAL]

ATTEST:

[Signature]

Title: CFO

CITY OF AUGUSTA, GEORGIA:

[Signature]
Honorable Deke Copenhaver, Mayor
AGW
4/11/14
GEORGIA

Approval: Date: 4/21/14
[ATTACHED CORPORATE SEAL]

ATTEST:

[Signature]

Title: Dep. Clerk of Commission
GEORGIA

Augusta, GA Engineering Department

GENERAL CONDITIONS

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS & ANALYZE WATERSHEDS, INVENTORY
STORMWATER FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

GENERAL CONDITIONS

ACCURACY OF WORK

The CONSULTANT shall be responsible for the accuracy of the work and shall promptly correct its errors and omissions without additional compensation.

Acceptance of the work by the CITY will not relieve the CONSULTANT of the responsibility for subsequent correction of any errors and the clarification of any ambiguities.

At any time during the construction of the improvement provided for by the plans or during any phase of work performed by others based on data secured by the CONSULTANT under the Agreement, the CONSULTANT shall confer with the CITY for the purpose of interpreting the information obtained and to correct any errors or omissions made by it.

The CONSULTANT shall prepare any plans or data required by the CITY to correct its errors or omissions. The above consultation, clarification, or correction shall be made without added compensation to the CONSULTANT. The CONSULTANT shall give immediate attention to these changes so there will be a minimum of delay to others.

ASSIGNABILITY

The CONSULTANT shall not assign or transfer whether by an assignment or novation, any of its rights, obligations, benefits, liabilities or other interest under this Agreement without the written consent of the CITY.

AUDITS AND INSPECTORS

At any time during normal business hours and as often as the CITY may deem necessary, the CONSULTANT shall make available to the CITY and/or audit representatives of the CITY for examination all of its records with respect to all matters covered by this Agreement. It shall also permit the CITY and/or representative of the audit, examine and make copies, excerpts or transcripts from such records of personnel, conditions employment and other data relating to all matters covered by this Agreement.

The CONSULTANT shall maintain all books, documents, papers, accounting records and other evidence pertaining to costs incurred on the Project and used in support of its proposal and shall make such material available at all reasonable time during the period of the Agreement,

GC1

and for three years from the date of final payment under the Agreement, for inspection by the CITY or any reviewing agencies, and copies thereof shall be furnished upon request at cost plus 10%. The CONSULTANT agrees that the provisions of this Article shall be included in any Agreements it may make with any subcontractor, assignee, or transferee.

COMPENSATION

The CITY shall compensate the CONSULTANT for services which have been authorized by the CITY under the terms of this Agreement.

The CONSULTANT may submit to the CITY a monthly invoice, in a form acceptable to the CITY and accompanied by all support documentation requested by the CITY, for payment for the services which were completed during the billing period. The CITY shall review said invoices for approval. The CITY shall have the right to reject payment of any invoice or part thereof if not properly supported, or if the costs requested or a part thereof, as determined solely by the CITY, are unreasonably in excess of the actual stage of completion of each phase. The CITY shall pay each such invoice or portion thereof as approved, provided that the approval or payment of any such invoice shall not be considered to be evidence of performance by the CONSULTANT to the point indicated by such invoice, or of receipt of acceptance by the CITY of the services covered by such invoice. The CITY shall pay any undisputed items contained in such invoices.

Each invoice shall be accompanied by a letter progress report describing the total work accomplished for each phase and any problems which have been encountered which may inhibit execution of the work. The CONSULTANT shall also submit an accurate updated schedule, and an itemized description of the percentage of total work completed for each phase during the billing period.

Compensation for design services for the Augusta Engineering Department shall be a lump sum for each phase or item of work authorized by the CITY. The CONSULTANT shall invoice based on the percentage of the work completed during the billing period. Upon completion by the CONSULTANT of each phase of the work and approval thereof by the CITY, the CITY will pay the CONSULTANT a sum equal to one hundred percent (100%) of the compensation set forth herein, less the total of all previous partial payments, paid or in the process of payment except as otherwise stated below for Water and Sewer design services.

Compensation for design services for the Augusta Utilities shall be invoiced based on the sum of all actual costs incurred in the performance of the work, including all direct, payroll, overhead, and profit costs in an amount not-to-exceed the compensation set forth herein for the Water and Sewer Plans Phase.

CONFIDENTIALITY

The CONSULTANT agrees that its conclusions and any reports are for the confidential information of the CITY and that it will not disclose its conclusions in whole or in part to any person whatsoever, other than to submit its written documentation to the CITY, and will only discuss the same with it or its authorized representatives. Upon completion of this agreement term, all documents, reports, maps, data and studies prepared by the CONSULTANT pursuant thereto shall become the property of the CITY and be delivered to the Director of Engineering.

Articles, papers, bulletins, reports, or other materials reporting the plans, progress, analyses, or results and findings of the work conducted under this agreement shall not be presented publicly or published without prior written approval in writing by the CITY.

It is further agreed that if any information concerning the project, its conduct, results, or data gathered or processed should be released by the CONSULTANT without prior approval from the CITY, the release of same shall constitute grounds for termination of this agreement without indemnity to the CONSULTANT, but should any such information be released by the CITY or by the CONSULTANT with such prior written approval, the same shall be regarded as public information and no longer subject to the restrictions of this agreement.

DESIGN AND REVIEW MANAGER

The Design and Review Manager (*Assistant Director of Engineering*) or his duly appointed representative(s) shall act as the Liaison Engineer between the CONSULTANT and the CITY and all utilities, and authorities or governments whose properties will be affected. The CONSULTANT shall arrange for conferences, for exchanges of data and information, and for necessary approvals.

All correspondence, data, information, and reports shall be directed to the Design and Review Manager to provide for proper distribution to the parties concerned.

All conferences, including telephone conversations and decisions, shall be reduced to writing by the CONSULTANT and at least two (2) copies shall be forwarded to the Design and Review Manager within seven (7) calendar days of the event.

The CONSULTANT shall meet with the CITY for review of the work or submit in writing a project status update on a monthly basis or as determined by the CITY.

The Design and Review Manager will expedite any necessary decisions affecting the performance of the CONSULTANT's Agreement, but the CONSULTANT shall not make use of the Design and Review Manager's services on trivial or minor matters normally to be decided by the CONSULTANT.

If the project includes work for Augusta Utilities, an AU Liaison Engineer will act in the same capacity as the AED Design and Review Manager does for the roadway design work. Both the AU Liaison Engineer and the AED Design and Review Manager shall be copied on all correspondence including documented phone conversations and minutes of meetings. The CONSULTANT shall coordinate directly with the AU Liaison Engineer on matters directly related to water and sewer work.

CONSULTANT COORDINATION

The CONSULTANT shall cooperate fully with the Georgia Department of Transportation, Federal Highway Administration, CONSULTANTs on adjacent projects, and CONSULTANTs for final bridge plans, municipalities and local government officials, utility companies, railroads, and others, as may be directed by the CITY. Such cooperation shall include attendance at meetings, discussions, and hearings, as may be requested by the CITY, furnishing plans and other data produced in the course of work on the Project, as may be requested from time to time by the CITY to effect such cooperation and compliance with all directives issued by the CITY in accordance with this agreement.

It is understood and agreed that the Georgia Department of Transportation and Federal Highway Administration may have access to the work and be furnished information as directed by the CITY.

CONTRACT DISPUTES

This Agreement shall be deemed to have been executed in Augusta, Georgia, and all questions of interpretation and construction shall be governed by the Laws of the State of Georgia.

All claims, disputes and other matters in question between the Owner and the CONSULTANT arising out of or relating to the Agreement, or the breach thereof, shall be decided in the Superior Court of Richmond County, Georgia. The CONSULTANT, by executing this Agreement, specifically consents to venue in Augusta and waives any right to contest the venue in the Superior Court of Richmond County, Georgia.

CONTRACT TERMINATION

Pursuant to O.C.G.A. 36-60-13, this Agreement shall terminate absolutely and without further obligation on the part of the CITY at the close of the calendar year in which this Agreement is executed and at the close of each succeeding calendar year for which the agreement may be renewed by the parties hereto.

This Agreement shall nevertheless automatically be renewed unless the CITY provides written notice to the CONSULTANT of its intention to terminate the Agreement at least thirty days prior to the close of the calendar year for which the Agreement is presently effective between the

parties and/or has been renewed by the CITY. This Agreement shall obligate the CITY solely for those sums payable during the initial term of execution or in the event of renewal by the CITY for those sums payable in such individual renewal terms.

Notwithstanding the foregoing language, the CONSULTANT agrees to continuously render the professional services specified by the Agreement to the CITY for such terms or renewal terms as are effective pursuant to this Agreement and for which the CITY agrees to pay in accordance with the terms of the Agreement or any future amendments thereto.

The CITY may terminate this contract in part or in whole upon written notice to the CONSULTANT. The CONSULTANT shall be paid for any validated services under this Contract up to the time of termination.

COORDINATION WITH THE NATIONAL GEODETIC SURVEY

If a National Geodetic Survey control point is found during the surveying phase, it is to be identified and brought to the attention of the Construction Manager. If it is to be affected based on the proposed design, at the direction of the Construction Manager, the CONSULTANT shall contact the National Geodetic Survey (NGS) advisor at the Georgia Department of Community Affairs (DCA) and request data on geodetic control points during the preliminary evaluation phase of project design. (Address: NGS c/o DCA, 1200 Equitable Building, Atlanta, Georgia 30303. Telephone: 404-656-5527, FAX: 404-656-9792. CONSULTANT shall provide the NGS Advisor with a clear copy of the pertinent USGS 7.5' Quad sheet(s) showing the project location. Preliminary information, even in rough outline, is sufficient to allow the advisor to determine impact of the proposed project on NGS and USGS control points. Continued coordination with the advisor to relocate and/or preserve affected control points will be maintained throughout the project life. This coordination shall be implemented as soon as possible after receipt of Notice to Proceed by the CITY.

COORDINATION WITH UTILITIES

Where privately, publicly or cooperatively owned utility companies will require rearrangements in connection with the proposed construction, the CONSULTANT shall furnish prints or reproducible for the utility owners as directed by the CITY and check the utilities' submitted plans for avoidance of conflicts with the road construction details or with the facilities of other utilities. This may require numerous submittals to the utility companies. The CONSULTANT shall also submit a final set of construction plans to all utilities. The CONSULTANT shall make no commitments with the utilities which are binding upon the CITY.

If the project includes work for the Augusta Utilities (AU), the CONSULTANT shall research all Augusta Utilities records and act on behalf of the AU to identify the existing facilities on the submitted roadway plans for avoidance, or resolution, of conflicts with the road construction details or with the existing or proposed facilities of other utilities.

GC5

COVENANT AGAINST CONTINGENT FEES

The CONSULTANT shall comply with the relevant requirements of all Federal, State, County, or local laws. The CONSULTANT warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT, to solicit or secure this Agreement, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, brokerage fee, gifts, or any consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the CITY shall have the right to annul this Agreement without liability, or, at its discretion, to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

DELIVERY OF NOTICES

All written notices, demands, and other papers or documents to be delivered to the CITY under this Agreement shall be delivered to the CITY's office, @ 505 Telfair Street, Augusta, GA 30901, or at such other place or places as may be subsequently designated by written notice to the CONSULTANT. All written notices, demands, and other papers or documents to be delivered to the CONSULTANT under this Agreement shall be directed to or at such a place or places subsequently to be designated in writing by the CONSULTANT to the CITY.

DRUG FREE WORK PLACE

CONSULTANT shall be responsible for insuring that its employees shall not be involved in any manner with the unlawful manufacture, distribution, dispensation, possession, sale or use of a controlled substance in the workplace. For purposes of the policy, "workplace" is defined as CITY owned or leased property, vehicles, and project or client site. Any violation of the prohibitions may result in discipline and/or immediate discharge.

CONSULTANT shall notify the appropriate federal agencies of an employee who has a criminal drug statute conviction for workplace violations.

CONSULTANT may require drug or alcohol testing of employees when contractually or legally obligated, or when good business practices would dictate.

EMPLOYMENT OF COUNTY'S PERSONNEL

The CITY has incurred considerable expense for advertising, recruiting, evaluating, training and retaining its employees. As such, CONSULTANT hereby agrees that it will not directly or indirectly, solicit or hire any employee of the CITY, or induce any employee to terminate his employment with the CITY during the terms of this agreement, nor for a period of one year

following the end of said term. CONSULTANT may not hire, employ, or allow a CITY employee to provide services without the prior consent of the CITY, except as provided herein

INSURANCE

Prior to beginning work, the CONSULTANT shall obtain and furnish certificates to the CITY for the following minimum amounts of insurance:

- A. Workmen's Compensation Insurance in accordance with the laws of the State of Georgia.
- B. Public Liability Insurance in an amount of not less than One Hundred Thousand (\$100,000.00) Dollars for injuries, including those resulting in death to any one person, and in an amount of not less than Three Hundred Thousand (\$300,000.00) Dollars on account of any one occurrence.
- C. Property Damage Insurance in an amount of not less than Fifty Thousand (\$50,000.00) Dollars from damages on account of any occurrence, with an aggregate limit of One Hundred Thousand (\$100,000.00) Dollars.
- D. Valuable Papers Insurance in an amount sufficient to assure the restoration of any plans, drawings, field notes, or other similar data relating to the work covered by the Project.
- E. Professional Liability Insurance in an amount that correlates to the amount of this agreement and nature of the project.

PERSONNEL

The CONSULTANT represents that it has secured or will secure, at its own expense, all personnel necessary to complete this agreement, none of whom shall be employees of, or have any contractual relationship with, the CITY. Primary liaison with the CITY will be through its designee. If the project includes AU work, the CONSULTANT shall identify, in writing, a water/sewer project manager responsible for direction and coordination of this portion of the project. All of the services required hereunder will be performed by the CONSULTANT under his supervision, and all personnel engaged in the work shall be fully qualified and shall be authorized or permitted under law to perform such services.

All professional personnel, including subcontractors, engaged in performing services for the CONSULTANT under this agreement shall be indicated in a personnel listing attached hereto as Exhibit "A" and incorporated herein by reference. No changes or substitutions shall be permitted in the CONSULTANT's key personnel as set forth herein without the prior written approval of the Director or his designee.

The CONSULTANT shall employ in responsible charge of supervision and design of the work only persons duly registered in the appropriate category; and further shall employ only qualified surveyors in responsible charge of any survey work.

The CONSULTANT shall endorse all reports, contract plans, and survey data. Such endorsements shall be made by a person duly registered in the appropriate category by the Georgia State Board of Registration for Professional Engineers and Land Surveyors, being in the full employ of the CONSULTANT and responsible for the work prescribed by this agreement.

RESPONSIBILITY FOR CLAIMS AND LIABILITY

The CONSULTANT shall be responsible for any and all damages to properties or persons caused by its employees, subcontractors, or agents, and shall hold harmless the CITY, its officers, agents, and employees from all suits, claims, actions, or damages of any nature whatsoever to the extent found to be resulting from the CONSULTANT, its subcontractors, or its agents in the performance or non-performance of work under this Agreement. These indemnities shall not be limited by reason of the listing of any insurance coverage.

REVIEW OF WORK

Authorized representatives of the CITY may at all reasonable times review and inspect the project activities and data collected under the Agreement and amendments thereto. All reports, drawings, studies, specifications, estimates, maps and computations prepared by or for the CONSULTANT, shall be available to authorized representatives of the CITY for inspection and review at all reasonable times in the main offices of the CITY. Acceptance shall not relieve the CONSULTANT of its professional obligation to correct, at its expense, any of its errors in work. The Engineering Department may request at any time and the CONSULTANT shall produce progress prints or copies of any work as performed under this Agreement. Refusal by the CONSULTANT to submit progress reports and/or plans shall be cause to withhold payment to the CONSULTANT until the CONSULTANT complies with the CITY's request in this regard. The CITY's review recommendations shall be incorporated into the plans by the CONSULTANT.

RIGHT TO ENTER

The CONSULTANT shall notify all property owners or occupants of the intent to enter properties for the purpose of accomplishing surveys or other field investigations in accordance with the practices of the CITY. The CONSULTANT shall discuss with and receive approval from the Augusta Engineering Department prior to sending said notices of intent to enter private property. Upon request by the CONSULTANT, the CITY will provide the necessary documents identifying the CONSULTANT as being in the employ of the CITY for the purpose described in the Agreement. If the property owner or occupant denies the CONSULTANT permission to enter, such incident will be reported to the CITY and the CITY will initiate such action as is dictated by current policy and procedure.

SUBCONTRACTING

The CONSULTANT shall not subcontract any part of the work covered by this Agreement or permit subcontracted work to be further subcontracted without the CITY's prior written approval of the subcontractor. The CITY will not approve any subcontractor for work covered by this Agreement that has not been recommended for approval the Construction Manager.

All subcontracts in the amount \$5,000 or more shall include, where possible, the provisions set forth in this Agreement.

SUPERVISION AND CONTROL

The CONSULTANT shall perform the services required to accomplish the work plan as stated above under such control and supervision by the CITY, as the CITY may deem appropriate.

SUSPENSION OF THE WORK, TERMINATION AND DELAY:

To the extent that it does not alter the scope of this Contract, Augusta, GA reserves the right of unilaterally ordering, without any cause, a temporary stopping of the work, or delaying of the work to be performed by the Contractor or Consultant under this Contract. Augusta, GA will not be held liable for compensation to the Contractor / Consultant for an extension of contract time or increase in contract price, or both, directly attributable to this action of Augusta, GA.

ESTIMATE OF QUANTITIES:

The estimated quantities of work to be done and materials to be furnished under this contract if shown in any of the documents including the bid are given only for use in comparing bids and to indicate approximately the total amount of the contract and the right is especially reserved except as herein otherwise specifically limited to increase or diminish them as may be deemed reasonably necessary or desirable by Augusta, GA to complete the work contemplated by this contract and such increase or diminution shall in no way vitiate this contract nor shall any such increase or diminution give cause for claims or liability for damages.

DEFECTIVE PRICING:

To the extent that the pricing provided by the contractor is erroneous and defective, the parties may, by agreement, correct pricing errors to reflect the intent of the parties.

SPECIFIED EXCUSES FOR DELAY OR NON-PERFORMANCE:

The contractor is not responsible for delay in performance caused by acts of nature, strikes, lockouts, accidents, or other events beyond the control of the contractor. In any such event, the contract price and schedule shall be equitably adjusted.

CONTRACT TERMINATION:

1. The Contractor shall promptly remove from the premises all work rejected by the Engineer for failure to comply with the Contract Documents, whether incorporated in the construction or not and the Contractor shall promptly replace and re-execute the work in accordance with the Contract Documents and without expense to the Owner and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

2. All removal and replacement work shall be done at the Contractor's expense. If the Contractor does not take action to remove such rejected work within ten (10) days after receipt of written notice, the Owner may remove such work and store the materials at the expense of the Contractor.

3. Any omissions or failure on the part of the Engineer to disapprove or reject any work or material shall not be construed to be an acceptance of any defective work or material. The Contractor shall remove, at his own expense and shall rebuild and replace same without extra charge and in default thereof the same may be done by the Owner at the Contractor's expense or in case the Engineer shall not consider the defect of sufficient importance to require the Contractor to rebuild or replace any imperfect work or material, he shall have the power and is hereby authorized to make an equitable deduction from the stipulated price.

HOLD HARMLESS:

Except as otherwise provided in this Contract, the contractor shall indemnify and hold harmless Augusta, GA, and its employees and agents from and against all liabilities, claims, suits, demands, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from the performance of its Work.

CONTINGENT FEES:

The contractor is prohibited from directly or indirectly advocating in exchange for compensation that is contingent in any way upon the approval of this contract or the passage, modification, or defeat of any legislative action on the part of the Augusta, Georgia Commission the contractor shall not hire anyone to actively advocate in exchange for compensation that is contingent in any way upon the passage, modification, or defeat of any contract or any legislation that is to go before the Augusta, Georgia Commission.

SITE CONDITIONS:

Site conditions differing from those indicated in the contract, or ordinarily encountered, except that a differing site conditions clause need not be included in a contract:

- (i) When the contract is negotiated,

- (ii) When the contractor provides the site or design, or
- (iii) When the parties have otherwise agreed with respect to the risk of differing site conditions

CONTRACTUAL OBLIGATIONS:

The contractor acknowledges that this contract and any changes to it by amendment, modification, change order or other similar document may have required or may require the legislative authorization of the Board of Commissioners and approval of the Mayor. Under Georgia law, the contractor is deemed to possess knowledge concerning Augusta, Georgia's ability to assume contractual obligations and the consequences of the contractor provision of goods or services to Augusta, Georgia under an unauthorized contract, amendment, modification, change order or other similar document, including the possibility that the contractor may be precluded from recovering payment for such unauthorized goods or services. Accordingly, the contractor agrees that if it provides goods or services to Augusta, Georgia under a contract that has not received proper legislative authorization or if the contractor provides goods or services to Augusta, Georgia in excess of the any contractually authorized goods or services, as required by Augusta, Georgia's Charter and Code, Augusta, Georgia may withhold payment for any unauthorized goods or services provided by the contractor. The contractor assumes all risk of non-payment for the provision of any unauthorized goods or services to Augusta, Georgia, and it waives all claims to payment or to other remedies for the provision of any unauthorized goods or services to Augusta, Georgia, however characterized, including, without limitation, all remedies at law or equity." This acknowledgement shall be a mandatory provision in all Augusta, Georgia contracts for goods and services, except revenue producing contracts.

LANDFILL:

All contracts for contractors performing demolition and/or construction projects for Augusta, Georgia shall contain a provision requiring that all debris, trash and rubble from the project be transported to and disposed of at the Augusta, Georgia Solid Waste Landfill in accordance with local and state regulations. The Contractor shall provide evidence of proper disposal through manifests, which shall include the types of material disposed of, the name and location of the disposal facility, date of disposal and all related fees

INSPECTIONS:

All contracts shall provide that Augusta, Georgia may, at reasonable times, inspect the part of the plant, place of business, or work site of a contractor or subcontractor or subunit thereof which is pertinent to the performance of any contract awarded or to be awarded by Augusta, Georgia.

LOCAL SMALL BUSINESS:

In accordance with Chapter 10B of the AUGUSTA, GA. CODE, the contractor expressly agrees to collect and maintain all records necessary to for Augusta, Georgia to evaluate the effectiveness of its Local Small Business Opportunity Program and to make such records available to Augusta, Georgia. The requirements of the Local Small Business Opportunity Program can be found at www.augustaga.gov. In accordance with AUGUSTA.GA CODE § 1-IO-129(d) (7), for all contracts where a local small business goal has been established, the contractor is required to provide local small business utilization reports. Contractor shall report to Augusta, Georgia the total dollars paid to each local small business on each contract, and shall provide such payment affidavits, regarding payment to subcontractors as may be requested by Augusta, Georgia. Such documents shall be in the format specified by the Director of Minority and Small Business Opportunities, and shall be submitted at such times as required by Augusta, Georgia. Failure to provide such reports within the time period specified by Augusta, Georgia shall entitle Augusta, Georgia to exercise any of the remedies set forth, including but not limited to, withholding payment from the contractor and/or collecting liquidated damages.

CONSTRUCTION ORDER AND SCHEDULE:

1. The Contractor shall be responsible for the detailed order, schedule, and methods of construction activities within the general guidelines specified for maintenance and protection of highway and pedestrian, traffic; utility lines; drainage ways; adjacent properties; and as otherwise specified.
2. After notice to proceed and prior to the first payment on the contract the Contractor shall submit the following for review:
 - A. Breakdown of contract price into units of cost for each item required to complete the total work; this breakdown will be the basis for judging the percentage complete at any time.
 - B. A statement of the order of procedure to be followed that will result in the required protection and completion of the work within the overall contract time.
 - C. A bar chart showing the percentage of each item schedules against time and so scheduled that Contractor's order of construction is clearly shown.
3. With each request for payment the Contractor shall submit two copies of the bar chart clearly marked to show the work completed at the date of the payment requested.

TERMINATION OF THE AGREEMENT FOR DEFAULT

Failure of the CONSULTANT, which has not been remedied or waived, to perform or otherwise comply with a material condition of the Agreement shall constitute default. The CITY may terminate this Agreement in part or in whole upon written notice to the CONSULTANT pursuant to this term.

TERMINATION OF THE AGREEMENT IN WHOLE OR IN PART FOR THE CONVENIENCE OF CITY

The CITY may terminate this Agreement in part or in whole upon written notice to the CONSULTANT. The CONSULTANT shall be paid for any validated services under this Agreement up to the time of termination

AN ACKNOWLEDGEMENT BY ALL PARTIES CONTRACTING WITH CITY AS FOLLOWS:

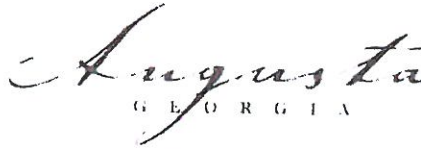
1. CONSULTANT acknowledges that this Agreement and any changes to it by amendment, modification, change order or other similar document may have required or may require the legislative authorization of the Board of Commissioners and approval of the Mayor. Under Georgia law, CONSULTANT is deemed to possess knowledge concerning CITY'S ability to assume contractual obligations and the consequences of CONSULTANT'S provision of goods or services to CITY under an unauthorized Agreement, amendment, modification, change order or other similar document, including the possibility that the CONSULTANT may be precluded from recovering payment for such unauthorized goods or services. Accordingly, CONSULTANT agrees that if it provides goods or services to CITY under a Agreement that has not received proper legislative authorization or if the CONSULTANT provides goods or services to CITY in excess of the any contractually authorized goods or services, as required by CITY'S Charter and Code, CITY may withhold payment for any unauthorized goods or services provided by CONSULTANT. CONSULTANT assumes all risk of non-payment for the provision of any unauthorized goods or services to CITY, and it waives all claims to payment or to other remedies for the provision of any unauthorized goods or services to CITY, however characterized, including, without limitation, all remedies at law or equity." This acknowledgement shall be a mandatory provision in all CITY Agreements for goods and services, except revenue producing Agreements.
2. All CONSULTANTS and SUB-CONSULTANTS entering into Agreements with CITY for the physical performance of services shall be required to execute an Affidavit verifying its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with the CITY has registered with and is participating in a federal work authorization program. All CONSULTANTS and SUB-CONSULTANTS must provide their E-Verify number and must be in compliance with the electronic verification of work authorized programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United

States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603, in accordance with the applicability provisions and deadlines established in O.C.G.A. § 13-10-91 and shall continue to use the federal authorization program throughout the Agreement term. All CONSULTANTS shall further agree that, should it employ or contract with any SUBCONSULTANT(S) in connection with the physical performance of services pursuant to its Agreement with CITY the CONSULTANT will secure from such SUB-CONSULTANT(S) each SUB-CONSULTANT'S E-Verify number as evidence of verification of compliance with O.C.G.A. § 13-10-91 on the SUB-CONSULTANT affidavit provided in Rule 300-10-01-.08 or a substantially similar form. All CONSULTANTS shall further agree to maintain records of such compliance and provide a copy of each such verification to CITY at the time the SUB-CONSULTANT(S) is retained to perform such physical services.

Augusta, GA Engineering Department

ATTACHMENT B

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**



Attachment B

You Must Complete and Return all 3 pages of Attachment B with Your Submittal. Document Must Be Notarized.

Augusta, Georgia Augusta Procurement Department
ATTN: Procurement Director
530 Greene Street, Suite 605
Augusta, Georgia 30901

Name of Bidder: CONSTANTINE ENGINEERING, INC.

Street Address: 1988 LEWIS TURNER BOULEVARD, UNIT #3

City, State, Zip Code: FORT WALTER BEACH, FL 32547

Phone: 850-244-5800

Fax: 850-862-5808

Email: STODD@TCENG.COM

Do You Have A Business License?

Yes: ☒ No: ☐

Business License # for your Company (Must Provide): CITY OF FORT WALTER BEACH, FL 0005079

Company must be licensed in the Governmental entity for where they do the majority of their business. If your Governmental entity (State or Local) does not require a business license, your company will be required to obtain a Richmond County business license if awarded a Bid/RFP/RFQ. For further information contact the License and Inspection Department @ 706 312-5162.

List the State, City & County that issued your license:

Acknowledgement of Addenda: (#1) ☒ (#2) ☒ (#3) ☐ (#4) ☐ (#5) ☐ (#6) ☐ (#7) ☐ (#8) ☐
NOTE: CHECK APPROPRIATE BOXES- ADD ADDITIONAL NUMBERS AS APPLICABLE

Statement of Non-Discrimination

The undersigned understands that it is the policy of Augusta, Georgia to promote full and equal business opportunity for all persons doing business with Augusta, Georgia. The undersigned covenants that we have not discriminated, on the basis of race, religion, gender, national origin or ethnicity, with regard to prime contracting, subcontracting or partnering opportunities.

The undersigned covenants and agrees to make good faith efforts to ensure maximum practicable participation of local small businesses on the bid or contract awarded by Augusta, Georgia. The undersigned further covenants that we have completed truthfully and fully the required forms regarding good faith efforts and local small business subcontractor/supplier utilization.

The undersigned further covenants and agrees not to engage in discriminatory conduct of any type against local small businesses, in conformity with Augusta, Georgia's Local Small Business Opportunity Program. Set forth below is the signature of an officer of the bidding/contracting entity with the authority to bind the entity.

The undersigned acknowledge and warrant that this Company has been made aware of understands and agrees to take affirmative action to provide such companies with the maximum practicable opportunities to do business with this Company;

That this promise of non-discrimination as made and set forth herein shall be continuing in nature and shall remain in full force and effect without interruption;

That the promises of non-discrimination as made and set forth herein shall be and are hereby deemed to be made as part of and incorporated by reference into any contract or portion thereof which this Company may hereafter obtain and;

That the failure of this Company to satisfactorily discharge any of the promises of nondiscrimination as made and set forth herein shall constitute a material breach of contract entitling Augusta, Georgia to declare the contract in default and to exercise any and all applicable rights remedies including but not limited to cancellation of the contract, termination of the contract, suspension and debarment from future contracting opportunities, and withholding and or forfeiture of compensation due and owing on a contract.

RFQ 13-149 Prof. Svcs Assess & Analyze Inventory Stormwater Facilities
Page 17 of 33

Attachment B - Page 2 of 3

Non-Collusion of Prime Bidder/Officer

By submission of a bid, the vendor certifies, under penalty of perjury, that to the best of its knowledge and belief:

(a) The prices in the proposal have been arrived at independently without collusion, consultation, communications, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other vendor or with any competitor.

(b) Unless otherwise required by law, the prices which have been quoted in the proposal have not been knowingly disclosed by the vendor prior to opening, directly or indirectly, to any other vendor or to any competitor.

(c) No attempt has been made, or will be made, by the vendor to induce any other person, partnership or corporation to submit or not to submit a proposal for the purpose of restricting competition. Collusions and fraud in bid preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

Conflict of Interest

By submission of a bid, the responding firm certifies, under penalty of perjury, that to the best of its knowledge and belief:

1. No circumstances exist which cause a Conflict of Interest in performing the services required by this ITB, and

2. That no employee of the County, nor any member thereof, nor any public agency or official affected by this ITB, has any pecuniary interest in the business of the responding firm or his sub-consultant(s) has any interest that would conflict in any manner or degree with the performance related to this ITB.

By submission of a bid, the vendor certifies under penalty of perjury, that to the best of its knowledge and belief:

(a) The prices in the bid have been arrived at independently without collusion, consultation, communications, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other vendor or with any competitor.

(b) Unless otherwise required by law, the prices which have been quoted in the bid have not knowingly been disclosed by the vendor prior to opening, directly or indirectly, to any other vendor or competitor.

(c) No attempt has been made, or will be made, by the vendor to induce any other person, partnership or cooperation to submit or not to submit a bid for the purpose of restricting competition. For any breach or violation of this provision, the County shall have the right to terminate any related contract or agreement without liability and at its discretion to deduct from the price, or otherwise recover, the full amount of such fee, commission, percentage, gift, payment or consideration.

You Must Complete and Return all 3 pages of Attachment B with Your Submittal. Document Must Be Notarized.

Attachment B - Page 3 of 3

Contractor Affidavit and Agreement

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with Augusta, Georgia Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91. The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with Augusta, Georgia Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Augusta, Georgia Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

Georgia Law requires your company to have an E-Verify* User Identification Number (Company I.D.) on or after July 1, 2009.

For additional information or to enroll your company, visit the State of Georgia website:

<https://e-verify.uscis.gov/enroll/> and/or http://www.dol.state.ga.us/pdf/rules/300_10_1.pdf

**** E-Verify * User Identification Number (Company I.D.) 104007**

NOTE E-VERIFY USER IDENTIFICATION NUMBER (COMPANY I.D.) MUST BE PROVIDED. IN ADDITION, THE RECOMMENDED AWARDED VENDOR WILL BE REQUIRED TO PROVIDE A COPY OF HOMELAND SECURITY'S MEMORANDUM OF UNDERSTANDING (MOU).

The undersigned further agrees to submit a notarized copy of Attachment B and any required documentation noted as part of the Augusta, Georgia Board of Commissioners specifications which govern this process. In addition, the undersigned agrees to submit all required forms for any subcontractor(s) as requested and or required. I further understand that my submittal will be deemed non-compliant if any part of this process is violated.

Constantine Engineering, Inc.
Company Name

BY: [Signature]
(Authorized Officer or Agent
(Contractor Signature)

President
Title of Authorized Officer or Agent of Contractor

James P. Kase, Jr.
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE 13th DAY OF June, 2013

Kelly Langley
Notary Public

My Commission Expires: August 15, 2015



You Must Complete and Return all 3 pages of Attachment B with Your Submittal. Document Must Be Notarized.

REV. 8/15/2011

RFQ 13-149 Prof. Svcs Assess & Analyze Inventory Stormwater Facilities
Page 19 of 33

Augusta
G E O R G I A

You Must Complete and Return with Your Submittal. Document Must Be Notarized

Systematic Alien Verification for Entitlements (SAVE) Program

Affidavit Verifying Status for Augusta, Georgia Benefit Application By executing this affidavit under oath, as an applicant for an Augusta, Georgia Business License or Occupation Tax Certificate, Alcohol License, Taxi Permit, Contract or other public benefit as reference in O.C.G.A. Section 50-36-1, I am stating the following with respect to my bid for an Augusta, Georgia contract for RFQ Item #13-149 Professional Services to Assess & Analyze Watersheds, Inventory Stormwater Facilities & Storm Conveyance [Bid/RFP/RFQ Project Number and Project Name]

Constantine Engineering, Inc.

[Print/Type: Name of natural person applying on behalf of individual, business, corporation, partnership, or other private entity]

[Print/Type: Name of business, corporation, partnership, or other private entity]

1.) ☒ I am a citizen of the United States.

OR

2.) ☐ I am a legal permanent resident 18 years of age or older.

OR

3.) ☐ I am an otherwise qualified alien (8 § USC 1641) or nonimmigrant under the Federal Immigration and Nationality Act (8 USC 1101 et seq.) 18 years of age or older and lawfully present in the United States.*

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of Code Section 16-10-20 of the Official Code of Georgia.

Signature of Applicant

James P. Wase, Jr.
Printed Name

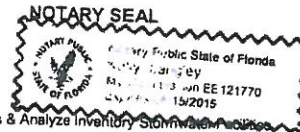
* Alien Registration Number for Non-Citizens

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE 13th DAY OF June, 2013

Kelly Langley
Notary Public

My Commission Expires. August 15, 2015

Note: **THIS FORM MUST BE RETURNED WITH YOUR SUBMITTAL**
Rev. 9/25/2012



RFQ 13-149 Prof. Svcs Assess & Analyze Inventory Stormwater Facilities
Page 20 of 33



You Must Complete and Return with Your Submittal. Document Must Be Notarized

Systematic Alien Verification for Entitlements (SAVE) Program

Affidavit Verifying Status for Augusta, Georgia Benefit Application By executing this affidavit under oath, as an applicant for an Augusta, Georgia Business License or Occupation Tax Certificate, Alcohol License, Taxi Permit, Contract or other public benefit as reference in O.C.G.A. Section 50-36-1, I am stating the following with respect to my bid for an Augusta, Georgia contract for RFQ Item #13-149 Professional Services to Assess & Analyze Wastewaters, Industrial Stormwater Facilities & Storm Conveyance [Bid/RFP/RFQ Project Number and Project Name]

Constantine Engineering, Inc.

[Print/Type: Name of natural person applying on behalf of individual, business, corporation, partnership, or other private entity]

[Print/Type: Name of business, corporation, partnership, or other private entity]

1.) ☒ I am a citizen of the United States.

OR

2.) ☐ I am a legal permanent resident 18 years of age or older.

OR

3.) ☐ I am an otherwise qualified alien (8 § USC 1641) or nonimmigrant under the Federal Immigration and Nationality Act (8 USC 1101 et seq.) 18 years of age or older and lawfully present in the United States.*

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of Code Section 16-10-20 of the Official Code of Georgia.

Signature of Applicant

James P. Wase Jr.

Printed Name

* Alien Registration Number for Non-Citizens

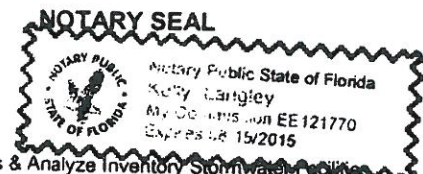
SUBSCRIBED AND SWORN BEFORE ME ON THIS THE 13th DAY OF June, 2013

Notary Public

My Commission Expires:

August 15, 2015

Note: THIS FORM MUST BE RETURNED WITH YOUR SUBMITTAL
Rev. 9/25/2012





STATE OF GEORGIA - COUNTY OF RICHMOND

BID/RFP/RFQ# 13-149

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is engaged in the physical performance of services under a contract with CONSTANTINE ENGINEERING on behalf of Augusta Richmond County Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O. C. G. A 13-10-91.

212507

E-Verify * User Identification Number

ENTRIX, INC. DBA CARNO ENTRIX

Company Name

[Signature]
BY: Authorized Officer or Agent
(Contractor Signature)

SENIOR CONSULTANT / PRINCIPAL
Title of Authorized Officer or Agent of Contractor

M. ANDREW BARTH
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE

4 DAY OF SEPTEMBER, 2013

[Signature]
Notary Public

My Commission Expires:

Georgia Law requires your company to have an E-Verify* User Identification Number on or after July 1, 2009.

For additional information: State of Georgia
http://www.dol.state.ga.us/pdf/rules/300_10_1.pdf
<https://e-verify.uscis.gov/enroll/>



NOTARY SEAL

Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).

REV. 7/22/2011



In accordance with the Laws of Georgia, the following affidavit is required by all vendors

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

I, ANDY BARTH certify that this bid or proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same work, labor or service to be done or the supplies, materials or equipment to be furnished and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all conditions of this bid or proposal and certify that I am authorized to sign this bid or proposal for the bidder. Affiant further states that pursuant to O.C.G.A. Section 36-91-21 (d) and (e),

CONSTANTINE ENGINEERING has not, by itself or with others, directly or indirectly, prevented or attempted to prevent competition in such bidding or proposals by any means whatsoever. Affiant further states that (s)he has not prevented or endeavored to prevent anyone from making a bid or offer on the project by any means whatever, nor has Affiant caused or induced another to withdraw a bid or offer for the work.

Affiant further states that the said offer of PROFESSIONAL SERVICES is bona fide, and that no one has gone to any supplier and attempted to get such person or company to furnish the materials to the bidder only, or if furnished to any other bidder, that the material shall be at a higher price.

Signature of Authorized Company Representative

SENIOR CONSULTANT / PRINCIPAL
Title

Sworn to and subscribed before me this 4 day of SEPTEMBER, 2013

Notary Signature

Notary Public:

County:

Commission Expires:



(Print Name)

NOTARY SEAL

Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).

Rev. 7/22/2011



STATE OF GEORGIA - COUNTY OF RICHMOND

BID/RFP/RFQ# 13-149

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is engaged in the physical performance of services under a contract with Constantine Engineering, on behalf of Augusta, Georgia Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O. C. G. A 13-10-91.

257101

E-Verify * User Identification Number

Zimmerman, Evans and Leopold, Inc.
Company Name

Jorge E. Jimenez
BY: Authorized Officer or Agent
(Contractor Signature)

President

Title of Authorized Officer or Agent of Contractor

Jorge E. Jimenez, P.E.
Printed Name of Authorized Officer or Agent

Georgia Law requires your company to have an E-Verify* User Identification Number on or after July 1, 2009.

For additional information: State of Georgia
http://www.dol.state.ga.us/pdf/rules/300_10_1.pdf
<https://e-verify.uscis.gov/enroll/>

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE

3rd DAY OF September, 2013

Patricia L. Greiner
Notary Public

My Commission Expires MY COMMISSION EXPIRES
11-22-2014

NOTARY SEAL



Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).

REV. 7/22/2011



In accordance with the Laws of Georgia, the following affidavit is required by all vendors

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

I, Joege E. Jimenez certify that this bid or proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same work, labor or service to be done or the supplies, materials or equipment to be furnished and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all conditions of this bid or proposal and certify that I am authorized to sign this bid or proposal for the bidder.

Affiant further states that pursuant to O.C.G.A. Section 36-91-21 (d) and (e), Zimmerman, Evans and Leopold, Inc. has not, by itself or with others, directly or indirectly, prevented or attempted to prevent competition in such bidding or proposals by any means whatsoever. Affiant further states that (s)he has not prevented or endeavored to prevent anyone from making a bid or offer on the project by any means whatever, nor has Affiant caused or induced another to withdraw a bid or offer for the work.

Affiant further states that the said offer of services is bona fide, and that no one has gone to any supplier and attempted to get such person or company to furnish the materials to the bidder only, or if furnished to any other bidder, that the material shall be at a higher price.

[Signature]
Signature of Authorized Company Representative

President

Title

Sworn to and subscribed before me this 3rd day of September, 2013

Patricia L. Greiner
Notary Signature

Notary Public: Patricia L. Greiner (Print Name)

County: Burke

Commission Expires: MY COMMISSION EXPIRES NOTARY SEAL
11-22-2014



Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).

Rev. 7/22/2011

Company ID Number: 104087

THE E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION

MEMORANDUM OF UNDERSTANDING

ARTICLE I

PURPOSE AND AUTHORITY

This Memorandum of Understanding (MOU) sets forth the points of agreement between the Social Security Administration (SSA), the Department of Homeland Security (DHS) and Constantine Engineering (Employer) regarding the Employer's participation in the Employment Eligibility Verification Program (E-Verify). E-Verify is a program in which the employment eligibility of all newly hired employees will be confirmed after the Employment Eligibility Verification Form (Form I-9) has been completed.

Authority for the E-Verify program is found in Title IV, Subtitle A, of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, 110 Stat. 3009, as amended (8 U.S.C. § 1324a note).

ARTICLE II

FUNCTIONS TO BE PERFORMED

A. RESPONSIBILITIES OF THE SSA

1. Upon completion of the Form I-9 by the employee and the Employer, and provided the Employer complies with the requirements of this MOU, SSA agrees to provide the Employer with available information that allows the Employer to confirm the accuracy of Social Security Numbers provided by all newly hired employees and the employment authorization of U.S. citizens.
2. The SSA agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. The SSA agrees to provide the Employer with names, titles, addresses, and telephone numbers of SSA representatives to be contacted during the E-Verify process.
3. The SSA agrees to safeguard the information provided by the Employer through the E-Verify program procedures, and to limit access to such information, as is appropriate by law, to individuals responsible for the verification of Social Security Numbers and for evaluation of the E-Verify program or such other persons or entities who may be authorized by the SSA as governed by the Privacy Act (5 U.S.C. § 552a), the Social Security Act (42 U.S.C. 1306(a)), and SSA regulations (20 CFR Part 401).
4. SSA agrees to establish a means of automated verification that is designed (in conjunction with DHS's automated system if necessary) to provide confirmation or tentative nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and aliens within 3 Federal Government work days of the initial inquiry.

Company ID Number: 104087

5. SSA agrees to establish a means of secondary verification (including updating SSA records as may be necessary) for employees who contest SSA tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and aliens within 10 Federal Government work days of the date of referral to SSA, unless SSA determines that more than 10 days may be necessary. In such cases, SSA will provide additional verification instructions.

B. RESPONSIBILITIES OF THE DEPARTMENT OF HOMELAND SECURITY

1. Upon completion of the Form I-9 by the employee and the Employer and after SSA verifies the accuracy of SSA records for aliens through E-Verify, DHS agrees to provide the Employer access to selected data from DHS's database to enable the Employer to conduct:

- Automated verification checks on newly hired alien employees by electronic means, and
- Photo verification checks (when available) on newly hired alien employees.

2. DHS agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. DHS agrees to provide the Employer names, titles, addresses, and telephone numbers of DHS representatives to be contacted during the E-Verify process.

3. DHS agrees to provide to the Employer a manual (the E-Verify Manual) containing instructions on E-Verify policies, procedures and requirements for both SSA and DHS, including restrictions on the use of E-Verify.. DHS agrees to provide training materials on E-Verify.

4. DHS agrees to provide to the Employer a notice, which indicates the Employer's participation in the E-Verify program. DHS also agrees to provide to the Employer anti-discrimination notices issued by the Office of Special Counsel for Immigration-Related Unfair Employment Practices (OSC), Civil Rights Division, and U.S. Department of Justice.

5. DHS agrees to issue the Employer a user identification number and password that permits the Employer to verify information provided by alien employees with DHS's database.

6. DHS agrees to safeguard the information provided to DHS by the Employer, and to limit access to such information to individuals responsible for the verification of alien employment eligibility and for evaluation of the E-Verify program, or to such other persons or entities as may be authorized by applicable law. Information will be used only to verify the accuracy of Social Security Numbers and employment eligibility, to enforce the Immigration and Nationality Act and federal criminal laws, and to ensure accurate wage reports to the SSA.

7. DHS agrees to establish a means of automated verification that is designed (in conjunction with SSA verification procedures) to provide confirmation or tentative nonconfirmation of employees' employment eligibility within 3 Federal Government work days of the initial inquiry.

Company ID Number: 104087

8. DHS agrees to establish a means of secondary verification (including updating DHS records as may be necessary) for employees who contest DHS tentative nonconfirmations and photo non-match tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of the employees' employment eligibility within 10 Federal Government work days of the date of referral to DHS, unless DHS determines that more than 10 days may be necessary. In such cases, DHS will provide additional verification instructions.

C. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the notices supplied by DHS in a prominent place that is clearly visible to prospective employees.
2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted regarding E-Verify.
3. The Employer agrees to become familiar with and comply with the E-Verify Manual.
4. The Employer agrees that any Employer Representative who will perform employment verification queries will complete the E-Verify Tutorial before that individual initiates any queries.
 - A. The employer agrees that all employer representatives will take the refresher tutorials initiated by the E-Verify program as a condition of continued use of E-Verify.
 - B. Failure to complete a refresher tutorial will prevent the employer from continued use of the program.
5. The Employer agrees to comply with established Form I-9 procedures, with two exceptions:
 - If an employee presents a "List B" identity document, the Employer agrees to only accept "List B" documents that contain a photo. (List B documents identified in 8 C.F.R. § 274a.2 (b) (1) (B)) can be presented during the Form I-9 process to establish identity).
 - If an employee presents a DHS Form I-551 (Permanent Resident Card) or Form I-766 (Employment Authorization Document) to complete the Form I-9, the Employer agrees to make a photocopy of the document and to retain the photocopy with the employee's Form I-9. The employer will use the photocopy to verify the photo and to assist the Department with its review of photo non-matches that are contested by employees. Note that employees retain the right to present any List A, or List B and List C, documentation to complete the Form I-9. DHS may in the future designate other documents that activate the photo screening tool.
6. The Employer understands that participation in E-Verify does not exempt the Employer from the responsibility to complete, retain, and make available for inspection Forms I-9 that relate to its employees, or from other requirements of applicable regulations or laws, except for the following modified requirements applicable by reason of the Employer's participation in E-Verify: (1) identity documents must have photos, as described in paragraph 5 above; (2) a

Company ID Number: 104087

rebuttable presumption is established that the Employer has not violated section 274A(a)(1)(A) of the Immigration and Nationality Act (INA) with respect to the hiring of any individual if it obtains confirmation of the identity and employment eligibility of the individual in compliance with the terms and conditions of E-Verify ; (3) the Employer must notify DHS if it continues to employ any employee after receiving a final nonconfirmation, and is subject to a civil money penalty between \$500 and \$1,000 for each failure to notify DHS of continued employment following a final nonconfirmation; (4) the Employer is subject to a rebuttable presumption that it has knowingly employed an unauthorized alien in violation of section 274A(a)(1)(A) if the Employer continues to employ any employee after receiving a final nonconfirmation; and (5) no person or entity participating in E-Verify is civilly or criminally liable under any law for any action taken in good faith on information provided through the confirmation system. DHS reserves the right to conduct Form I-9 compliance inspections during the course of E-Verify, as well as to conduct any other enforcement activity authorized by law.

7. The Employer agrees to initiate E-Verify verification procedures within 3 Employer business days after each employee has been hired (but after both sections 1 and 2 of the Form I-9 have been completed), and to complete as many (but only as many) steps of the E-Verify process as are necessary according to the E-Verify Manual. The Employer is prohibited from initiating verification procedures before the employee has been hired and the Form I-9 completed. If the automated system to be queried is temporarily unavailable, the 3-day time period is extended until it is again operational in order to accommodate the Employer's attempting, in good faith, to make inquiries during the period of unavailability. In all cases, the Employer must use the SSA verification procedures first, and use DHS verification procedures and photo screening tool only after the the SSA verification response has been given.

8. The Employer agrees not to use E-Verify procedures for pre-employment screening of job applicants, support for any unlawful employment practice, or any other use not authorized by this MOU. The Employer must use E-Verify for all new employees and will not verify only certain employees selectively. The Employer agrees not to use E-Verify procedures for re-verification, or for employees hired before the date this MOU is in effect. The Employer understands that if the Employer uses E-Verify procedures for any purpose other than as authorized by this MOU, the Employer may be subject to appropriate legal action and the immediate termination of its access to SSA and DHS information pursuant to this MOU.

9. The Employer agrees to follow appropriate procedures (see Article III.B. below) regarding tentative nonconfirmations, including notifying employees of the finding, providing written referral instructions to employees, allowing employees to contest the finding, and not taking adverse action against employees if they choose to contest the finding. Further, when employees contest a tentative nonconfirmation based upon a photo non-match, the Employer is required to take affirmative steps (see Article III.B. below) to contact DHS with information necessary to resolve the challenge.

10. The Employer agrees not to take any adverse action against an employee based upon the employee's employment eligibility status while SSA or DHS is processing the verification request unless the Employer obtains knowledge (as defined in 8 C.F.R. § 274a.1 (1)) that the employee is not work authorized. The Employer understands that an initial inability of the SSA or DHS automated verification to verify work authorization, a tentative nonconfirmation, or the finding of

Company ID Number: 104087

a photo non-match, does not mean, and should not be interpreted as, an indication that the employee is not work authorized. In any of the cases listed above, the employee must be provided the opportunity to contest the finding, and if he or she does so, may not be terminated or suffer any adverse employment consequences until and unless secondary verification by SSA or DHS has been completed and a final nonconfirmation has been issued. If the employee does not choose to contest a tentative nonconfirmation or a photo non-match, then the Employer can find the employee is not work authorized and take the appropriate action.

11. The Employer agrees to comply with section 274B of the INA by not discriminating unlawfully against any individual in hiring, firing, or recruitment or referral practices because of his or her national origin or, in the case of a protected individual as defined in section 274B(a)(3) of the INA, because of his or her citizenship status. The Employer understands that such illegal practices can include selective verification or use of E-Verify, discharging or refusing to hire eligible employees because they appear or sound "foreign", and premature termination of employees based upon tentative nonconfirmations, and that any violation of the unfair immigration-related employment practices provisions of the INA could subject the Employer to civil penalties pursuant to section 274B of the INA and the termination of its participation in E-Verify. If the Employer has any questions relating to the anti-discrimination provision, it should contact OSC at 1-800-255-7688 or 1-800-237-2515 (TDD).

12. The Employer agrees to record the case verification number on the employee's Form I-9 or to print the screen containing the case verification number and attach it to the employee's Form I-9.

13. The Employer agrees that it will use the information it receives from the SSA or DHS pursuant to E-Verify and this MOU only to confirm the employment eligibility of newly-hired employees after completion of the Form I-9. The Employer agrees that it will safeguard this information, and means of access to it (such as PINS and passwords) to ensure that it is not used for any other purpose and as necessary to protect its confidentiality, including ensuring that it is not disseminated to any person other than employees of the Employer who are authorized to perform the Employer's responsibilities under this MOU.

14. The Employer acknowledges that the information which it receives from SSA is governed by the Privacy Act (5 U.S.C. § 552a (i) (1) and (3)) and the Social Security Act (42 U.S.C. 1306(a)), and that any person who obtains this information under false pretenses or uses it for any purpose other than as provided for in this MOU may be subject to criminal penalties.

15. The Employer agrees to allow DHS and SSA, or their authorized agents or designees, to make periodic visits to the Employer for the purpose of reviewing E-Verify -related records, i.e., Forms I-9, SSA Transaction Records, and DHS verification records, which were created during the Employer's participation in the E-Verify Program. In addition, for the purpose of evaluating E-Verify, the Employer agrees to allow DHS and SSA or their authorized agents or designees, to interview it regarding its experience with E-Verify, to interview employees hired during E-Verify use concerning their experience with the pilot, and to make employment and E-Verify related records available to DHS and the SSA, or their designated agents or designees. Failure to comply with the terms of this paragraph may lead DHS to terminate the Employer's access to E-Verify.

Company ID Number: 104087

ARTICLE III

REFERRAL OF INDIVIDUALS TO THE SSA AND THE DEPARTMENT OF HOMELAND SECURITY

A. REFERRAL TO THE SSA

1. If the Employer receives a tentative nonconfirmation issued by SSA, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.
2. The Employer will refer employees to SSA field offices only as directed by the automated system based on a tentative nonconfirmation, and only after the Employer records the case verification number, reviews the input to detect any transaction errors, and determines that the employee contests the tentative nonconfirmation. The Employer will transmit the Social Security Number to SSA for verification again if this review indicates a need to do so. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.
3. If the employee contests an SSA tentative nonconfirmation, the Employer will provide the employee with a referral letter and instruct the employee to visit an SSA office to resolve the discrepancy within 8 Federal Government work days. The Employer will make a second inquiry to the SSA database using E-Verify procedures on the date that is 10 Federal Government work days after the date of the referral in order to obtain confirmation, or final nonconfirmation, unless otherwise instructed by SSA or unless SSA determines that more than 10 days is necessary to resolve the tentative nonconfirmation..
4. The Employer agrees not to ask the employee to obtain a printout from the Social Security Number database (the Numident) or other written verification of the Social Security Number from the SSA.

B. REFERRAL TO THE DEPARTMENT OF HOMELAND SECURITY

1. If the Employer receives a tentative nonconfirmation issued by DHS, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.
2. If the Employer finds a photo non-match for an alien who provides a document for which the automated system has transmitted a photo, the employer must print the photo non-match tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the finding.
3. The Employer agrees to refer individuals to DHS only when the employee chooses to contest a tentative nonconfirmation received from DHS automated verification process or when

Company ID Number: 104087

the Employer issues a tentative nonconfirmation based upon a photo non-match. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

4. If the employee contests a tentative nonconfirmation issued by DHS, the Employer will provide the employee with a referral letter and instruct the employee to contact the Department through its toll-free hotline within 8 Federal Government work days.

5. If the employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will provide the employee with a referral letter to DHS. DHS will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary.

6. The Employer agrees that if an employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will send a copy of the employee's Form I-551 or Form I-766 to DHS for review by:

- Scanning and uploading the document, or
- Sending a photocopy of the document by an express mail account (furnished and paid for by DHS).

7. The Employer understands that if it cannot determine whether there is a photo match/non-match, the Employer is required to forward the employee's documentation to DHS by scanning and uploading, or by sending the document as described in the preceding paragraph, and resolving the case as specified by the Immigration Services Verifier at DHS who will determine the photo match or non-match.

ARTICLE IV

SERVICE PROVISIONS

The SSA and DHS will not charge the Employer for verification services performed under this MOU. The Employer is responsible for providing equipment needed to make inquiries. To access the E-Verify System, an Employer will need a personal computer with Internet access.

ARTICLE V

PARTIES

This MOU is effective upon the signature of all parties, and shall continue in effect for as long as the SSA and DHS conduct the E-Verify program unless modified in writing by the mutual consent of all parties, or terminated by any party upon 30 days prior written notice to the others. Any and all system enhancements to the E-Verify program by DHS or SSA, including but not limited to the E-Verify checking against additional data sources and instituting new verification procedures, will be covered under this MOU and will not cause the need for a supplemental MOU that outlines these changes. DHS agrees to train employers on all changes made to E-Verify through the use of mandatory refresher tutorials and updates to the E-Verify manual. Even

Company ID Number: 104087

without changes to E-Verify, the Department reserves the right to require employers to take mandatory refresher tutorials.

Termination by any party shall terminate the MOU as to all parties. The SSA or DHS may terminate this MOU without prior notice if deemed necessary because of the requirements of law or policy, or upon a determination by SSA or DHS that there has been a breach of system integrity or security by the Employer, or a failure on the part of the Employer to comply with established procedures or legal requirements. Some or all SSA and DHS responsibilities under this MOU may be performed by contractor(s), and SSA and DHS may adjust verification responsibilities between each other as they may determine.

Nothing in this MOU is intended, or should be construed, to create any right or benefit, substantive or procedural, enforceable at law by any third party against the United States, its agencies, officers, or employees, or against the Employer, its agents, officers, or employees.

Each party shall be solely responsible for defending any claim or action against it arising out of or related to E-Verify or this MOU, whether civil or criminal, and for any liability wherefrom, including (but not limited to) any dispute between the Employer and any other person or entity regarding the applicability of Section 403(d) of IIRIRA to any action taken or allegedly taken by the Employer.

The employer understands that the fact of its participation in E-Verify is not confidential information and may be disclosed as authorized or required by law and DHS or SSA policy, including but not limited to, Congressional oversight, E-Verify publicity and media inquiries, and responses to inquiries under the Freedom of Information Act (FOIA).

The foregoing constitutes the full agreement on this subject between the SSA, DHS, and the Employer.

The individuals whose signatures appear below represent that they are authorized to enter into this MOU on behalf of the Employer and DHS respectively.

To be accepted as a participant in E-Verify, you should only sign the Employer's Section of the signature page. If you have any questions, contact E-Verify Operations at 888-464-4218.

Employer Constantine Engineering

James P Kizer

Name (Please type or print)

Title

Electronically Signed

03/01/2008

Signature

Date

Department of Homeland Security – Verification Division

Company ID Number: 104087

**INFORMATION REQUIRED
FOR THE E-VERIFY PROGRAM**

Information relating to your Company:

Company Name: Constantine Engineering

Company Facility Address: 2004 Lewis Turner Boulevard
Suite B
Fort Walton Beach, FL 32547

Company Alternate Address: _____

County or Parish: OKALOOSA

Employer Identification Number: 261308592

North American Industry
Classification Systems Code: 541

Parent Company: _____

Number of Employees: 10 to 19 Number of Sites Verified for: 1

Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State.

- FLORIDA 1 site(s)

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

Name:	Wendy Brege	Fax Number:	(850) 862 - 5808
Telephone Number:	(850) 244 - 5800		
E-mail Address:	wbrege@tcgeng.com		
Name:	James P Kizer	Fax Number:	(850) 862 - 5808
Telephone Number:	(850) 244 - 5800		
E-mail Address:	jkizer@tcgeng.com		

Company ID Number: 104087

USCIS Verification Division

Name (Please type or print)

Electronically Signed

Signature

Title

03/01/2008

Date



You Must Complete and Return with Your Submittal. Document Must Be Notarized

Systematic Alien Verification for Entitlements (SAVE) Program

Affidavit Verifying Status for Augusta, Georgia Benefit Application By executing this affidavit under oath, as an applicant for an Augusta, Georgia Business License or Occupation Tax Certificate, Alcohol License, Taxi Permit, Contract or other public benefit as reference in O.C.G.A. Section 50-36-1, I am stating the following with respect to my bid for an Augusta, Georgia contract for RFQ Item #13-149 Professional Services to Assess & Analyze Watersheds, Industrial Stormwater Facilities & Storm Conveyance [Bid/RFP/RFQ Project Number and Project Name]

Constantine Engineering, LLC

[Print/Type: Name of natural person applying on behalf of individual, business, corporation, partnership, or other private entity]

[Print/Type: Name of business, corporation, partnership, or other private entity]

1.) ☒ I am a citizen of the United States.

OR

2.) ☐ I am a legal permanent resident 18 years of age or older.

OR

3.) ☐ I am an otherwise qualified alien (8 § USC 1641) or nonimmigrant under the Federal Immigration and Nationality Act (8 USC 1101 et seq.) 18 years of age or older and lawfully present in the United States.*

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of Code Section 16-10-20 of the Official Code of Georgia.

Signature of Applicant

James P. White, Jr.

Printed Name

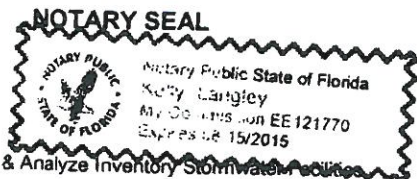
* Alien Registration Number for Non-Citizens

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE 13th DAY OF June, 2013

Kelly Langley
Notary Public

My Commission Expires: August 15, 2015

Note: THIS FORM MUST BE RETURNED WITH YOUR SUBMITTAL
Rev. 9/25/2012





STATE OF GEORGIA - COUNTY OF RICHMOND

BID/RFP/RFQ# 13-149

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is engaged in the physical performance of services under a contract with CONSTANTINE ENGINEERING on behalf of Augusta Richmond County Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O. C. G. A 13-10-91.

212507
E-Verify* User Identification Number

ENTRIX, INC DBA CARONO ENTRIX
Company Name

[Signature]
BY: Authorized Officer or Agent
(Contractor Signature)

SENIOR CONSULTANT / PRINCIPAL
Title of Authorized Officer or Agent of Contractor

M. ANDREW BARTH
Printed Name of Authorized Officer or Agent

Georgia Law requires your company to have an E-Verify* User Identification Number on or after July 1, 2009.

For additional information: State of Georgia
http://www.dol.state.ga.us/pdf/rules/300_10_1.pdf
<https://e-verify.uscis.gov/enroll/>

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE

4 DAY OF SEPTEMBER, 2013

[Signature]
Notary Public

My Commission Expires:



NOTARY SEAL

Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).



In accordance with the Laws of Georgia, the following affidavit is required by all vendors

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

I, ANDY BARTH certify that this bid or proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same work, labor or service to be done or the supplies, materials or equipment to be furnished and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all conditions of this bid or proposal and certify that I am authorized to sign this bid or proposal for the bidder. Affiant further states that pursuant to O.C.G.A. Section 36-91-21 (d) and (e),

CONSTANTINE ENGINEERING has not, by itself or with others, directly or indirectly, prevented or attempted to prevent competition in such bidding or proposals by any means whatsoever. Affiant further states that (s)he has not prevented or endeavored to prevent anyone from making a bid or offer on the project by any means whatever, nor has Affiant caused or induced another to withdraw a bid or offer for the work.

Affiant further states that the said offer of PROFESSIONAL SERVICES is bona fide, and that no one has gone to any supplier and attempted to get such person or company to furnish the materials to the bidder only, or if furnished to any other bidder, that the material shall be at a higher price.

[Signature]
Signature of Authorized Company Representative

SENIOR CONSULTANT / PRINCIPAL
Title

Sworn to and subscribed before me this 4 day of SEPTEMBER, 2013

[Signature]
Notary Signature

Notary Public:

County:

Commission Expires:



(Print Name)

NOTARY SEAL

Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).

Rev. 7/22/2011



STATE OF GEORGIA - COUNTY OF RICHMOND

BID/RFP/RFQ# 13-149

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is engaged in the physical performance of services under a contract with Constantine Engineering, on behalf of Augusta, Georgia Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O. C. G. A 13-10-91.

257101

E-Verify * User Identification Number

Zimmerman, Evans and Leopold, Inc.
Company Name

Jorge E. Jimenez
BY: Authorized Officer or Agent
(Contractor Signature)

President

Title of Authorized Officer or Agent of Contractor

Jorge E. Jimenez, P.E.
Printed Name of Authorized Officer or Agent

Georgia Law requires your company to have an E-Verify* User Identification Number on or after July 1, 2009.

For additional information: State of Georgia
http://www.dol.state.ga.us/pdf/rules/300_10_1.pdf
<https://e-verify.uscis.gov/enroll/>

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE

3rd DAY OF September, 2013

Patricia L. Greiner
Notary Public

My Commission Expires MY COMMISSION EXPIRES
11-22-2014

NOTARY SEAL



Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).

REV. 7/22/2011



In accordance with the Laws of Georgia, the following affidavit is required by all vendors

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

I, Joege E. Jimenez certify that this bid or proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same work, labor or service to be done or the supplies, materials or equipment to be furnished and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all conditions of this bid or proposal and certify that I am authorized to sign this bid or proposal for the bidder.

Affiant further states that pursuant to O.C.G.A. Section 36-91-21 (d) and (e), Zimmerman, Evans and Leopold, Inc. has not, by itself or with others, directly or indirectly, prevented or attempted to prevent competition in such bidding or proposals by any means whatsoever. Affiant further states that (s)he has not prevented or endeavored to prevent anyone from making a bid or offer on the project by any means whatever, nor has Affiant caused or induced another to withdraw a bid or offer for the work.

Affiant further states that the said offer of services is bona fide, and that no one has gone to any supplier and attempted to get such person or company to furnish the materials to the bidder only, or if furnished to any other bidder, that the material shall be at a higher price.

[Signature]
Signature of Authorized Company Representative

President

Title

Sworn to and subscribed before me this 3rd day of September, 2013

[Signature]
Notary Signature

Notary Public: Patricia L. Greiner (Print Name)

County: Burke

Commission Expires: MY COMMISSION EXPIRES
11-22-2014

NOTARY SEAL



Note: The successful vendor will submit the above forms to the Procurement Department no later than five (5) days after receiving the "Letter of Recommendation" (Vendor's letter will denote the date forms are to be received).

Rev. 7/22/2011

Company ID Number: 104087

THE E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION

MEMORANDUM OF UNDERSTANDING

ARTICLE I

PURPOSE AND AUTHORITY

This Memorandum of Understanding (MOU) sets forth the points of agreement between the Social Security Administration (SSA), the Department of Homeland Security (DHS) and **Constantine Engineering** (Employer) regarding the Employer's participation in the Employment Eligibility Verification Program (E-Verify). E-Verify is a program in which the employment eligibility of all newly hired employees will be confirmed after the Employment Eligibility Verification Form (Form I-9) has been completed.

Authority for the E-Verify program is found in Title IV, Subtitle A, of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, 110 Stat. 3009, as amended (8 U.S.C. § 1324a note).

ARTICLE II

FUNCTIONS TO BE PERFORMED

A. RESPONSIBILITIES OF THE SSA

1. Upon completion of the Form I-9 by the employee and the Employer, and provided the Employer complies with the requirements of this MOU, SSA agrees to provide the Employer with available information that allows the Employer to confirm the accuracy of Social Security Numbers provided by all newly hired employees and the employment authorization of U.S. citizens.
2. The SSA agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. The SSA agrees to provide the Employer with names, titles, addresses, and telephone numbers of SSA representatives to be contacted during the E-Verify process.
3. The SSA agrees to safeguard the information provided by the Employer through the E-Verify program procedures, and to limit access to such information, as is appropriate by law, to individuals responsible for the verification of Social Security Numbers and for evaluation of the E-Verify program or such other persons or entities who may be authorized by the SSA as governed by the Privacy Act (5 U.S.C. § 552a), the Social Security Act (42 U.S.C. 1306(a)), and SSA regulations (20 CFR Part 401).
4. SSA agrees to establish a means of automated verification that is designed (in conjunction with DHS's automated system if necessary) to provide confirmation or tentative nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and aliens within 3 Federal Government work days of the initial inquiry.

Company ID Number: 104087

5. SSA agrees to establish a means of secondary verification (including updating SSA records as may be necessary) for employees who contest SSA tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and aliens within 10 Federal Government work days of the date of referral to SSA, unless SSA determines that more than 10 days may be necessary. In such cases, SSA will provide additional verification instructions.

B. RESPONSIBILITIES OF THE DEPARTMENT OF HOMELAND SECURITY

1. Upon completion of the Form I-9 by the employee and the Employer and after SSA verifies the accuracy of SSA records for aliens through E-Verify, DHS agrees to provide the Employer access to selected data from DHS's database to enable the Employer to conduct:

- Automated verification checks on newly hired alien employees by electronic means, and
- Photo verification checks (when available) on newly hired alien employees.

2. DHS agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. DHS agrees to provide the Employer names, titles, addresses, and telephone numbers of DHS representatives to be contacted during the E-Verify process.

3. DHS agrees to provide to the Employer a manual (the E-Verify Manual) containing instructions on E-Verify policies, procedures and requirements for both SSA and DHS, including restrictions on the use of E-Verify. DHS agrees to provide training materials on E-Verify.

4. DHS agrees to provide to the Employer a notice, which indicates the Employer's participation in the E-Verify program. DHS also agrees to provide to the Employer anti-discrimination notices issued by the Office of Special Counsel for Immigration-Related Unfair Employment Practices (OSC), Civil Rights Division, and U.S. Department of Justice.

5. DHS agrees to issue the Employer a user identification number and password that permits the Employer to verify information provided by alien employees with DHS's database.

6. DHS agrees to safeguard the information provided to DHS by the Employer, and to limit access to such information to individuals responsible for the verification of alien employment eligibility and for evaluation of the E-Verify program, or to such other persons or entities as may be authorized by applicable law. Information will be used only to verify the accuracy of Social Security Numbers and employment eligibility, to enforce the Immigration and Nationality Act and federal criminal laws, and to ensure accurate wage reports to the SSA.

7. DHS agrees to establish a means of automated verification that is designed (in conjunction with SSA verification procedures) to provide confirmation or tentative nonconfirmation of employees' employment eligibility within 3 Federal Government work days of the initial inquiry.

Company ID Number: 104087

8. DHS agrees to establish a means of secondary verification (including updating DHS records as may be necessary) for employees who contest DHS tentative nonconfirmations and photo non-match tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of the employees' employment eligibility within 10 Federal Government work days of the date of referral to DHS, unless DHS determines that more than 10 days may be necessary. In such cases, DHS will provide additional verification instructions.

C. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the notices supplied by DHS in a prominent place that is clearly visible to prospective employees.
2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted regarding E-Verify.
3. The Employer agrees to become familiar with and comply with the E-Verify Manual.
4. The Employer agrees that any Employer Representative who will perform employment verification queries will complete the E-Verify Tutorial before that individual initiates any queries.
 - A. The employer agrees that all employer representatives will take the refresher tutorials initiated by the E-Verify program as a condition of continued use of E-Verify.
 - B. Failure to complete a refresher tutorial will prevent the employer from continued use of the program.
5. The Employer agrees to comply with established Form I-9 procedures, with two exceptions:
 - If an employee presents a "List B" identity document, the Employer agrees to only accept "List B" documents that contain a photo. (List B documents identified in 8 C.F.R. § 274a.2 (b) (1) (B)) can be presented during the Form I-9 process to establish identity).
 - If an employee presents a DHS Form I-551 (Permanent Resident Card) or Form I-766 (Employment Authorization Document) to complete the Form I-9, the Employer agrees to make a photocopy of the document and to retain the photocopy with the employee's Form I-9. The employer will use the photocopy to verify the photo and to assist the Department with its review of photo non-matches that are contested by employees. Note that employees retain the right to present any List A, or List B and List C, documentation to complete the Form I-9. DHS may in the future designate other documents that activate the photo screening tool.
6. The Employer understands that participation in E-Verify does not exempt the Employer from the responsibility to complete, retain, and make available for inspection Forms I-9 that relate to its employees, or from other requirements of applicable regulations or laws, except for the following modified requirements applicable by reason of the Employer's participation in E-Verify: (1) identity documents must have photos, as described in paragraph 5 above; (2) a

Company ID Number: 104087

rebuttable presumption is established that the Employer has not violated section 274A(a)(1)(A) of the Immigration and Nationality Act (INA) with respect to the hiring of any individual if it obtains confirmation of the identity and employment eligibility of the individual in compliance with the terms and conditions of E-Verify ; (3) the Employer must notify DHS if it continues to employ any employee after receiving a final nonconfirmation, and is subject to a civil money penalty between \$500 and \$1,000 for each failure to notify DHS of continued employment following a final nonconfirmation; (4) the Employer is subject to a rebuttable presumption that it has knowingly employed an unauthorized alien in violation of section 274A(a)(1)(A) if the Employer continues to employ any employee after receiving a final nonconfirmation; and (5) no person or entity participating in E-Verify is civilly or criminally liable under any law for any action taken in good faith on information provided through the confirmation system. DHS reserves the right to conduct Form I-9 compliance inspections during the course of E-Verify, as well as to conduct any other enforcement activity authorized by law.

7. The Employer agrees to initiate E-Verify verification procedures within 3 Employer business days after each employee has been hired (but after both sections 1 and 2 of the Form I-9 have been completed), and to complete as many (but only as many) steps of the E-Verify process as are necessary according to the E-Verify Manual. The Employer is prohibited from initiating verification procedures before the employee has been hired and the Form I-9 completed. If the automated system to be queried is temporarily unavailable, the 3-day time period is extended until it is again operational in order to accommodate the Employer's attempting, in good faith, to make inquiries during the period of unavailability. In all cases, the Employer must use the SSA verification procedures first, and use DHS verification procedures and photo screening tool only after the the SSA verification response has been given.

8. The Employer agrees not to use E-Verify procedures for pre-employment screening of job applicants, support for any unlawful employment practice, or any other use not authorized by this MOU. The Employer must use E-Verify for all new employees and will not verify only certain employees selectively. The Employer agrees not to use E-Verify procedures for re-verification, or for employees hired before the date this MOU is in effect. The Employer understands that if the Employer uses E-Verify procedures for any purpose other than as authorized by this MOU, the Employer may be subject to appropriate legal action and the immediate termination of its access to SSA and DHS information pursuant to this MOU.

9. The Employer agrees to follow appropriate procedures (see Article III.B. below) regarding tentative nonconfirmations, including notifying employees of the finding, providing written referral instructions to employees, allowing employees to contest the finding, and not taking adverse action against employees if they choose to contest the finding. Further, when employees contest a tentative nonconfirmation based upon a photo non-match, the Employer is required to take affirmative steps (see Article III.B. below) to contact DHS with information necessary to resolve the challenge.

10. The Employer agrees not to take any adverse action against an employee based upon the employee's employment eligibility status while SSA or DHS is processing the verification request unless the Employer obtains knowledge (as defined in 8 C.F.R. § 274a.1 (l)) that the employee is not work authorized. The Employer understands that an initial inability of the SSA or DHS automated verification to verify work authorization, a tentative nonconfirmation, or the finding of

Company ID Number: 104087

a photo non-match, does not mean, and should not be interpreted as, an indication that the employee is not work authorized. In any of the cases listed above, the employee must be provided the opportunity to contest the finding, and if he or she does so, may not be terminated or suffer any adverse employment consequences until and unless secondary verification by SSA or DHS has been completed and a final nonconfirmation has been issued. If the employee does not choose to contest a tentative nonconfirmation or a photo non-match, then the Employer can find the employee is not work authorized and take the appropriate action.

11. The Employer agrees to comply with section 274B of the INA by not discriminating unlawfully against any individual in hiring, firing, or recruitment or referral practices because of his or her national origin or, in the case of a protected individual as defined in section 274B(a)(3) of the INA, because of his or her citizenship status. The Employer understands that such illegal practices can include selective verification or use of E-Verify, discharging or refusing to hire eligible employees because they appear or sound "foreign", and premature termination of employees based upon tentative nonconfirmations, and that any violation of the unfair immigration-related employment practices provisions of the INA could subject the Employer to civil penalties pursuant to section 274B of the INA and the termination of its participation in E-Verify. If the Employer has any questions relating to the anti-discrimination provision, it should contact OSC at 1-800-255-7688 or 1-800-237-2515 (TDD).

12. The Employer agrees to record the case verification number on the employee's Form I-9 or to print the screen containing the case verification number and attach it to the employee's Form I-9.

13. The Employer agrees that it will use the information it receives from the SSA or DHS pursuant to E-Verify and this MOU only to confirm the employment eligibility of newly-hired employees after completion of the Form I-9. The Employer agrees that it will safeguard this information, and means of access to it (such as PINS and passwords) to ensure that it is not used for any other purpose and as necessary to protect its confidentiality, including ensuring that it is not disseminated to any person other than employees of the Employer who are authorized to perform the Employer's responsibilities under this MOU.

14. The Employer acknowledges that the information which it receives from SSA is governed by the Privacy Act (5 U.S.C. § 552a (i) (1) and (3)) and the Social Security Act (42 U.S.C. 1306(a)), and that any person who obtains this information under false pretenses or uses it for any purpose other than as provided for in this MOU may be subject to criminal penalties.

15. The Employer agrees to allow DHS and SSA, or their authorized agents or designees, to make periodic visits to the Employer for the purpose of reviewing E-Verify -related records, i.e., Forms I-9, SSA Transaction Records, and DHS verification records, which were created during the Employer's participation in the E-Verify Program. In addition, for the purpose of evaluating E-Verify, the Employer agrees to allow DHS and SSA or their authorized agents or designees, to interview it regarding its experience with E-Verify, to interview employees hired during E-Verify use concerning their experience with the pilot, and to make employment and E-Verify related records available to DHS and the SSA, or their designated agents or designees. Failure to comply with the terms of this paragraph may lead DHS to terminate the Employer's access to E-Verify.

Company ID Number: 104087

ARTICLE III

REFERRAL OF INDIVIDUALS TO THE SSA AND THE DEPARTMENT OF HOMELAND SECURITY

A. REFERRAL TO THE SSA

1. If the Employer receives a tentative nonconfirmation issued by SSA, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.
2. The Employer will refer employees to SSA field offices only as directed by the automated system based on a tentative nonconfirmation, and only after the Employer records the case verification number, reviews the input to detect any transaction errors, and determines that the employee contests the tentative nonconfirmation. The Employer will transmit the Social Security Number to SSA for verification again if this review indicates a need to do so. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.
3. If the employee contests an SSA tentative nonconfirmation, the Employer will provide the employee with a referral letter and instruct the employee to visit an SSA office to resolve the discrepancy within 8 Federal Government work days. The Employer will make a second inquiry to the SSA database using E-Verify procedures on the date that is 10 Federal Government work days after the date of the referral in order to obtain confirmation, or final nonconfirmation, unless otherwise instructed by SSA or unless SSA determines that more than 10 days is necessary to resolve the tentative nonconfirmation..
4. The Employer agrees not to ask the employee to obtain a printout from the Social Security Number database (the Numident) or other written verification of the Social Security Number from the SSA.

B. REFERRAL TO THE DEPARTMENT OF HOMELAND SECURITY

1. If the Employer receives a tentative nonconfirmation issued by DHS, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.
2. If the Employer finds a photo non-match for an alien who provides a document for which the automated system has transmitted a photo, the employer must print the photo non-match tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the finding.
3. The Employer agrees to refer individuals to DHS only when the employee chooses to contest a tentative nonconfirmation received from DHS automated verification process or when

Company ID Number: 104087

the Employer issues a tentative nonconfirmation based upon a photo non-match. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

4. If the employee contests a tentative nonconfirmation issued by DHS, the Employer will provide the employee with a referral letter and instruct the employee to contact the Department through its toll-free hotline within 8 Federal Government work days.

5. If the employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will provide the employee with a referral letter to DHS. DHS will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary.

6. The Employer agrees that if an employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will send a copy of the employee's Form I-551 or Form I-766 to DHS for review by:

- Scanning and uploading the document, or
- Sending a photocopy of the document by an express mail account (furnished and paid for by DHS).

7. The Employer understands that if it cannot determine whether there is a photo match/non-match, the Employer is required to forward the employee's documentation to DHS by scanning and uploading, or by sending the document as described in the preceding paragraph, and resolving the case as specified by the Immigration Services Verifier at DHS who will determine the photo match or non-match.

ARTICLE IV

SERVICE PROVISIONS

The SSA and DHS will not charge the Employer for verification services performed under this MOU. The Employer is responsible for providing equipment needed to make inquiries. To access the E-Verify System, an Employer will need a personal computer with Internet access.

ARTICLE V

PARTIES

This MOU is effective upon the signature of all parties, and shall continue in effect for as long as the SSA and DHS conduct the E-Verify program unless modified in writing by the mutual consent of all parties, or terminated by any party upon 30 days prior written notice to the others. Any and all system enhancements to the E-Verify program by DHS or SSA, including but not limited to the E-Verify checking against additional data sources and instituting new verification procedures, will be covered under this MOU and will not cause the need for a supplemental MOU that outlines these changes. DHS agrees to train employers on all changes made to E-Verify through the use of mandatory refresher tutorials and updates to the E-Verify manual. Even

Company ID Number: 104087

without changes to E-Verify, the Department reserves the right to require employers to take mandatory refresher tutorials.

Termination by any party shall terminate the MOU as to all parties. The SSA or DHS may terminate this MOU without prior notice if deemed necessary because of the requirements of law or policy, or upon a determination by SSA or DHS that there has been a breach of system integrity or security by the Employer, or a failure on the part of the Employer to comply with established procedures or legal requirements. Some or all SSA and DHS responsibilities under this MOU may be performed by contractor(s), and SSA and DHS may adjust verification responsibilities between each other as they may determine.

Nothing in this MOU is intended, or should be construed, to create any right or benefit, substantive or procedural, enforceable at law by any third party against the United States, its agencies, officers, or employees, or against the Employer, its agents, officers, or employees.

Each party shall be solely responsible for defending any claim or action against it arising out of or related to E-Verify or this MOU, whether civil or criminal, and for any liability wherefrom, including (but not limited to) any dispute between the Employer and any other person or entity regarding the applicability of Section 403(d) of IIRIRA to any action taken or allegedly taken by the Employer.

The employer understands that the fact of its participation in E-Verify is not confidential information and may be disclosed as authorized or required by law and DHS or SSA policy, including but not limited to, Congressional oversight, E-Verify publicity and media inquiries, and responses to inquiries under the Freedom of Information Act (FOIA).

The foregoing constitutes the full agreement on this subject between the SSA, DHS, and the Employer.

The individuals whose signatures appear below represent that they are authorized to enter into this MOU on behalf of the Employer and DHS respectively.

To be accepted as a participant in E-Verify, you should only sign the Employer's Section of the signature page. If you have any questions, contact E-Verify Operations at 888-464-4218.

Employer Constantine Engineering

James P Kizer

Name (Please type or print)

Title

Electronically Signed

03/01/2008

Signature

Date

Department of Homeland Security – Verification Division

Company ID Number: 104087

**INFORMATION REQUIRED
FOR THE E-VERIFY PROGRAM**

Information relating to your Company:

Company Name: Constantine Engineering

Company Facility Address: 2004 Lewis Turner Boulevard
Suite B
Fort Walton Beach, FL 32547

Company Alternate Address: _____

County or Parish: OKALOOSA

Employer Identification Number: 261308592

North American Industry
Classification Systems Code: 541

Parent Company: _____

Number of Employees: 10 to 19 Number of Sites Verified for: 1

Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State.

- FLORIDA 1 site(s)

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

Name:	Wendy Brege	Fax Number:	(850) 862 - 5808
Telephone Number:	(850) 244 - 5800		
E-mail Address:	wbrege@tcgeng.com		
Name:	James P Kizer	Fax Number:	(850) 862 - 5808
Telephone Number:	(850) 244 - 5800		
E-mail Address:	jkizer@tcgeng.com		

Company ID Number: 104087

USCIS Verification Division

Name (Please type or print)

Title

Electronically Signed

03/01/2008

Signature

Date

Augusta, GA Engineering Department

APPENDIX A

**CONSULTANT SERVICES AGREEMENT
PROFESSIONAL SERVICES TO ASSESS &
ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

**PROFESSIONAL SERVICES TO ASSESS & ANALYZE WATERSHEDS, INVENTORY STORMWATER
FACILITIES & STORM CONVEYANCE
PROJECT NUMBER: 328-041110-211828002**

APPENDIX A

STANDARD SPECIFICATIONS

CRITERIA:

The Consultant shall become familiar with the latest, as determined by the AED, the American Association of State Highway and Transportation Officials' Design Manuals for Arterial Streets, Rural, Urban, and Interstate Highways, including those standards adopted by the AASHTO and approved by the Secretary of Commerce, as provided by Title 23, United States Code, Section 109 (b), with the City's and Georgia D.O.T. Standards, Procedures, Plans, Specifications and Methods, with Federal Highway Administration procedures relating to plan review and approval, and shall produce plans in accordance therewith.

DESIGN & DOCUMENT DEVELOPMENT:

The following publication shall be used as the basis for the engineering design and professional services contained herein; Georgia Department of Transportation Standard Manuals and Specifications for the Construction of Road and Bridges, current editions, and supplements thereto; American Association of State Highway and Transportation Officials (AASHTO) Manuals for Arterial Streets, Rural, Urban, and Interstate Highways, Manual on Uniform Traffic Control Design (MUTCD), Augusta Development Documents, the Augusta Utilities Design Standards and Construction Specifications, State and Federal guidance documents, Industry current standards for similar services.

The Consultant shall gather from the City all available data and information pertinent to the performance of the services for the Project. The City shall have the final decision as to what data and information is pertinent.

The Consultant shall ensure that the data and information meet applicable standards as specified herein.

The Consultant shall report in writing any discovery of errors or omissions contained in the data and information furnished by the City.

The Consultant shall visit and become familiar with project area and shall become acquainted with local conditions involved in carrying out this agreement. The Consultant may request that a representative of the City be present during the site visit.

The Consultant shall recommend and secure the City's written approval of, the manner of project plans and documents preparation and presentation and the methods to be used in the plans/documents preparation so that these plans/documents can be utilized as determined by the Consultant and approved by the City, in the orderly preparation of the detailed construction contract plans, specifications, and contracts. Upon receipt of the City's written approval of the manner of the project plans and documents preparation & presentation, The Consultant shall proceed with implementation of plans/documents preparation.

DESIGN SPECIFICATIONS:

Design for bridges and other structures shall be in accordance with the American Association of State Highway and Transportation Officials', hereinafter referred to as "AASHTO," Design Specifications of 1992; AASHTO Standard Specifications for Horizontal Curved Highway Bridges; AASHTO Standard Specifications for Structure Supports for Highway Signs, Luminaires and Traffic Signals, current edition; and AASHTO Guide for Selecting, Locating and Designing Traffic Barriers, current edition.

Traffic engineering shall be performed in accordance with procedures outlined in the Highway Capacity Manual, Current Edition.

The lighting design shall be in accordance with the AASHTO publication, An Informational Guide for Roadway Lighting current edition, and the Standard Specifications for Road and Bridge Construction, 1983 edition, as modified by Supplemental Specifications and Special Provisions, current editions.

On facilities where driveways are included, the Consultant shall become familiar with the Georgia D.O.T. regulations and procedures and shall produce plans for upgrading driveway control.

CONSTRUCTION SPECIFICATIONS:

The plans shall be in accordance with the Georgia D.O.T.'s Standard Specifications for Construction of Roads and Bridges, as amended. The Consultant shall have access to the Georgia Standard Construction and Materials Specifications for use throughout the Project.

PLAN SIZES:

All plans for roadways, bridges, and walls may be Civil 3D or compatible generated drawings on paper having outside dimensions of 24" by 36" with 1-1/2" margin on the left and 1/2" margin elsewhere. All plans shall be of reproducible quality.

CONSTRUCTION PLAN REQUIREMENTS:

Detailed requirements for the construction plans shall meet the criteria set forth in the Augusta Public Works and Engineering Department Plan Preparation Guidelines.

The plans shall be fully dimensioned; all elevations necessary for construction shall be shown similar to the GDOT's normal practice. They shall include a fully dimensioned geometric layout to permit staking in the field without additional computation by the survey party. Utility locations and methods of attachment shall be shown. Utilities to be carried on bridges will be established by the AED.

In steel construction, the sizes and overall dimensions of members, their exact locations, the number and arrangement of fasteners, fastener spacing, welds and other details necessary in preparation of shop detail drawing shall be shown. In concrete construction, the location of all reinforcement shall be shown and the plans shall include complete schedules of straight and bent bars with bending details. The Consultant shall check all details and dimensions shown on the plans before they are submitted to the AED for review.

Roadway plan sheets shall have the existing topography on the back of the sheet to permit manual revisions to the front of the drawing, using a screening process producing 85 lines per inch with 50% light. Existing topography may be plotted in ink if this gives a screening effect acceptable to the AED.

Topography shall remain fully legible when plans are reduced in size, but shall be less prominent and readily distinguishable from proposed work.

Profile sheets shall have the existing ground line plotted in ink on the sheet.

Utility plan sheets may be the same material as the roadway plans.

COMPUTATIONS:

All design computations and computer printouts shall be neatly recorded on 8-1/2" by 11" sheets, fully titled, numbered, dated, signed by the designer and checker and indexed. Two copies of these computations, and the computer input and output, fully checked and appropriately bound, shall be submitted to the AED with the plans for approval.

A complete tabulation of the drainage analysis along with the calculations used to determine the size of drainage structures shall be submitted to the AED with the construction plans for approval.

DELIVERABLE:

The tracings, data and all other documents prepared under this agreement shall then be submitted to the AED, AED or AUD, whose property they shall remain, without limitation as to their future use. All tracing cloth, mylar paper, and other materials required for the preparation of the plans, supplemental specifications, special provisions and computation shall be furnished by the Consultant.

The Consultant shall submit to the AED, editable electronic copy of all computer files (ACAD, Microsoft version, or other software used in creating data, data file, technical documents, etc.) depicting graphics, database, documentation, details and design for the implementation of stormwater utility,

drainage improvements, and road design data, created as a result of this agreement. The Consultant shall include appropriate level schedules, documentation, and assistance to the AED to read, interpret, and effectively utilize the computer files. The Consultant may be required to provide project drawings and files at any time as requested by the AED. The drawings and files (hard or electronic) requested by the AED shall be within the Scope of Work as defined herein. Graphics files shall be provided in AutoCAD, DXF, or Intergraph (IGDS) format. If the project includes AU work, the Consultant shall provide drawings in accordance with the utilities chapter of the AED Plan Preparation Guidelines.

NUMBER OF COPIES OF SUPPORTING DATA REQUIRED:

Data collected for this project will be property of Augusta Engineering Department. In additions to required hard copies submittals, selected Firm(s) or Team(s) will be required to provide Augusta Engineering Department one electronic (editable) copy of all documents and studies, supporting raw data, environmental data and analysis, geotechnical data and analysis, hydrology and hydraulic studies, design plans, construction plans and constriction standards and specifications. Electronic copies shall be submitted in respective software and compatible with Software used by Augusta Engineering Department. Except as otherwise provided herein; the Consultant shall submit all documents, reports, special provisions, sketches, design notes, and all other required or necessary support data to the AED in duplicate.

PROGRESS REPORT AND SCHEDULE:

The Consultant shall report to the AED on suitable forms approved by the AED the status of work and schedule on the 25th day of each month during the life of the Agreement.

PROFESSIONAL ENGINEER APPROVAL:

All construction plans and documents designed, detailed, and furnished by the Consultant for the AED shall bear a valid Professional Engineer Stamp. All plans submitted to the AED for review shall have been checked by the Consultant prior to submission.

ECONOMICAL DESIGN:

The Consultant shall make every effort to provide the most economical design. The Consultant shall consider construction problems and sequencing in the design. The Consultant shall meet and discuss economic considerations and construction staging with the AED prior to final design.

Augusta, GA Engineering Department
Abie L. Ladson, PE, CPESC, Director
505 Telfair Street • Augusta, GA 30909
Office (706) 796 - 5040 • Fax (706) 796 - 5045
www.augustaga.gov